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Highway Safety 1983

A Report on Activities Under the
Highway Safety Act of 1966
as Amended
January 1, 1983 - December 31, 1983

U.S. DEPARTMENT OF
TRANSPORTATION
National Highway Traffic
Safety Administration
Federal Highway Administration

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U.S. Department of Transportation
National Highway Traffic Safety Administration

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HIGHWAY SAFETY 1983

A Report on Activities Under the
Highway Safety Act of 1966
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PART I

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Introduction

The National Highway Traffic Safety Administration was established by the Highway Safety Act of 1970, as the successor to the National Highway Safety Bureau, to carry out safety programs under the National Traffic and Motor Vehicle Safety Act of 1966 and the Highway Safety Act of 1966. It also carries out programs established by the Motor Vehicle Information and Cost Savings Act of 1972 and the Energy Policy and Conservation Act of 1975.

It is responsible for reducing deaths, injuries, and economic losses resulting from motor vehicle damage. This is accomplished by setting and enforcing safety performance standards for motor vehicles, and through grants to state and local governments to enable them to organize, develop, and implement their highway safety programs more effectively. NHTSA investigates safety defects in motor vehicles, sets and enforces fuel economy standards, provides leadership to the states and local communities to reduce the threat of drunk drivers, promotes the use of safety belts and child safety seats, investigates odometer fraud, and provides consumer information on motor vehicle safety and the comparative crashworthiness of new cars. It also conducts research to demonstrate the relationship between driver skill and behavior and traffic safety, and to develop the most efficient and effective means of bringing about safety improvements.

The Highway Safety Problem

When someone under age 44 dies in this country, it is more likely to be from a traffic accident than any other single cause. The average age of persons killed in traffic accidents is 34, a disproportionate toll of young people with their most productive years ahead of them.

The social cost of these accidents is staggering because each accident usually affects more than just the victim alone. The victim's family, close friends, and employer are also affected, and society as a whole must share in the costs in the form of lost productivity, property damage, increased costs for medical insurance, and municipal expenses resulting from the accident. The annual social cost of traffic accidents is estimated to be $57 billion.

Although traffic accidents continue to be a leading killer in this country, the safety picture has improved significantly since passage of the basic legislation in 1966, which began the national efforts to improve traffic safety. In that year, there were nearly 96 million vehicles on the road and traffic fatalities exceeded 50,000 for the first time. In 1983, although approximately 165 million vehicles operated on our roadways, the nation experienced the lowest number of fatalities in 20 years.

Alcohol abuse continues to be the number one highway safety problem in this country; alcohol is involved in 50 to 55 percent of all traffic fatalities. Also, failure to use the safety belts that are in nearly every passenger car on the road today results in more fatalities and injuries than would occur otherwise; fatalities in passenger cars could be cut in half if everyone used safety belts.

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Table 1.

1983 Traffic Fatality Summary

Occupants of Passenger Cars	22,976
Occupants of Vans, Pickups, and Multipurpose Vehicles	6,163
Occupants of Heavy Trucks	807
Occupants of School Buses	17
Motorcyclists	4,264
Pedestrians	6,824
Pedalcyclists	839
Occupants of Other Vehicles	694

The traffic safety problem touches virtually every community with a commonality that has fostered the growth of promising private sector and government efforts against drunk driving and in support of safety belt and child safety seat use. As a result, 1983 witnessed a continuation of national interest in the drunk driving issue, and an increased commitment to promoting safety belt and child safety seat use.

Trends

Traffic fatalities dropped for the third year in a row. A total of 42,584 persons lost their lives in traffic accidents in 1983, a 3 percent decrease from the preceding year and a 17 percent decrease from 1980.

Historically, traffic fatalities have tended to follow economic patterns, with more miles driven and higher numbers of fatalities during periods of economic prosperity, and fewer miles driven and fewer fatalities during slower economic periods.

But in 1983, with the economy growing, there was both an increase in miles driven (up 3.9 percent) and a decrease in traffic deaths. An analysis of the fatality statistics suggests that while complex economic factors probably

Figure 1. **U.S. Traffic Fatalities by Year — 1960 to 1983**

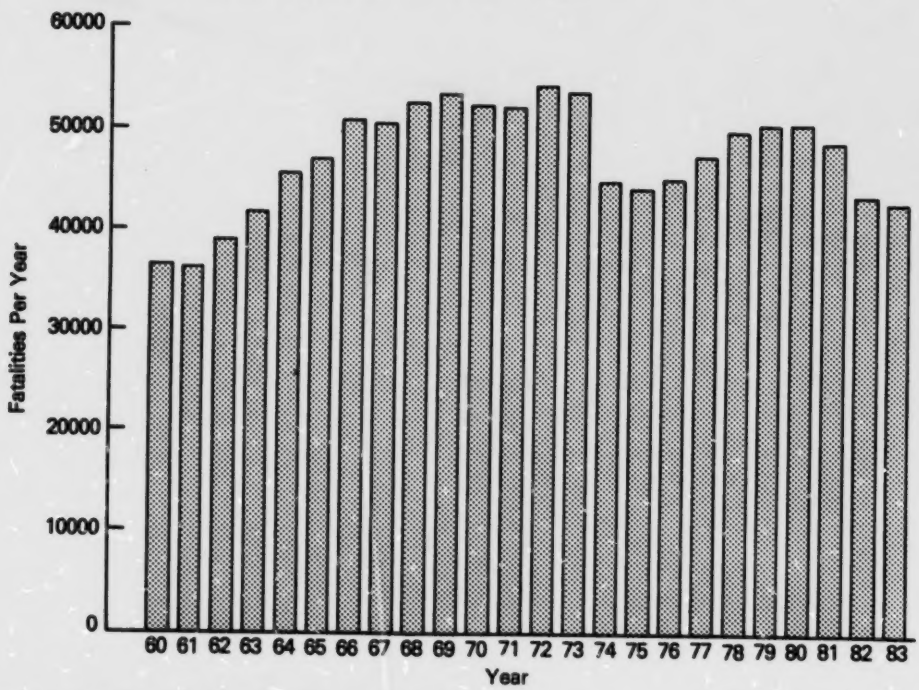

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Table 2. Trends in Motor Vehicle Traffic Deaths in the United States
1961, 1970, 1972, 1974-1983

Item	1961	1970	1972	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Deaths	36,285	52,627	54,589	45,196	44,525	45,523	47,878	50,331	51,093	51,091	49,301	43,945	42,584
Motor Vehicle Travel (billion of vehicle miles)	737	1,110	1,260	1,281	1,328	1,402	1,467	1,545	1,529	1,528	1,556	1,592	1,655
Registered Motor Vehicles (100,000)	766	1,112	1,226	1,349	1,379	1,435	1,473	1,536	1,596	1,616	1,641	1,653	1,677
Resident Population (100,000)	1,830	2,040	2,093	2,133	2,155	2,176	2,198	2,221	2,246	2,272	2,293	2,315	2,340
Licensed Drivers (100,000)	887	1,115	1,184	1,254	1,298	1,340	1,381	1,408	1,430	1,453	1,471	1,503	1,520
Death Rates													
Per Hundred Million Vehicle Miles	4.92	4.74	4.33	3.53	3.35	3.25	3.26	3.26	3.34	3.34	3.17	2.76	2.57
Per 100,000 Registered Vehicles	47.37	47.31	44.54	33.50	32.28	31.73	32.51	32.76	32.01	31.62	30.04	26.59	25.39
Per 100,000 Resident Population	19.83	25.80	26.08	21.18	20.66	20.92	21.79	22.66	22.75	22.49	21.50	18.98	18.20
Per 100,000 Licensed Drivers	40.91	47.18	46.10	36.03	34.31	33.96	34.66	35.74	35.66	35.16	33.52	29.24	28.02
Vehicle and Driver Relationship													
Ratio, Registered Motor Vehicles to Licensed Drivers	0.86	1.00	1.03	1.08	1.06	1.07	1.07	1.09	1.11	1.11	1.12	1.10	1.10
Ratio, Registered Motor Vehicles to Resident Population	0.42	0.55	0.59	0.63	0.64	0.66	0.67	0.69	0.71	0.71	0.72	0.71	0.72
Ratio, Licensed Drivers to Resident Population	0.48	0.55	0.57	0.59	0.60	0.62	0.63	0.63	0.64	0.64	0.64	0.65	0.65

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influenced the reduction, strong national and community action against drunk driving, and fewer teenage drivers were the most likely reasons for the magnitude of the decrease.

The national outrage over drunk driving, combined with tougher laws and stepped-up enforcement, apparently has caused some people to modify their drinking and driving habits for the better. For example, based on comparisons of 1980 with 1983, the number of fatally injured drivers with blood alcohol concentrations (BAC) in the .01 to .09 range, which would categorize them as moderate, or social drinkers, decreased by nearly 14 percent. Similarly, the single number of drivers who were legally drunk (BAC of .10 or more) at the time they were killed decreased by nearly 10 percent.

In single vehicle fatal crashes, where NHTSA estimates that alcohol is involved 65 percent of the time, there was a 20 percent reduction in fatalities between 1980 and 1983.

During times when the most serious accidents usually occur, late night and Friday/Saturday nights, fatalities were down by 24 percent and 13 percent, respectively, from 1980 to 1983; again suggesting that drivers may be moderating their drinking or reducing their driving after drinking.

Demographics also influenced the drop in fatalities. During the same 3-year period, the population of the U.S. increased by almost 3 percent but the 15-19 age group decreased by more than 9 percent. The decrease in their numbers, coupled with their higher than average reduction in traffic fatalities among the different age groups on a per capita basis, resulted in this group accounting for 27 percent of the total reduction. Among all drivers, males under age 25 had the greatest reduction in fatalities (27 percent), while females in the same age group experienced a 10 percent reduction. All other age groups experienced a combined reduction of 11 percent.

The reductions in occupant fatalities between 1980 and 1983 were very similar among the three major motor vehicle classes: passenger cars (17 percent); motorcycles (18 percent); and trucks and buses (18 percent). Compact and smaller cars had only a 5 percent reduction in occupant fatalities compared with 32 percent for intermediate and larger cars.

Important Fatality Changes From 1982 to 1983

- The largest reductions occurred in the Southwest region and in the states of New York and New Jersey. The Northwest and Southeast showed small increases.

- Restraint usage in fatal accidents increased from 3 percent in 1980 to 5 percent in 1983 for passenger vehicle occupants. The increase was from 6 to 21 percent for children under age 6. Motorcycle helmet usage remained constant at about 41 percent.

- Accidents involving heavy trucks continued to account for about 10 percent of all traffic fatalities and for about 20 percent of all fatalities resulting from vehicle-to-vehicle crashes.

- Pedestrian and bicyclist fatalities decreased by 8 percent while the reduction in vehicle occupant fatalities was less than 3 percent.

- Driver fatalities dropped 3 percent. The reduction was 7 percent for drivers under age 25 and less than 2 percent for other ages. Drivers 65 years of age or older showed a 3 percent fatality

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increase. Male driver fatalities decreased while female driver fatalities increased by 3 percent.

- Fatalities decreased more on weekends (6 percent) than on weekdays (2 percent).

- During nighttime hours (6 p.m. to 6 a.m.) fatalities decreased by 7 percent; they rose 2 percent during the remaining 12 hours.

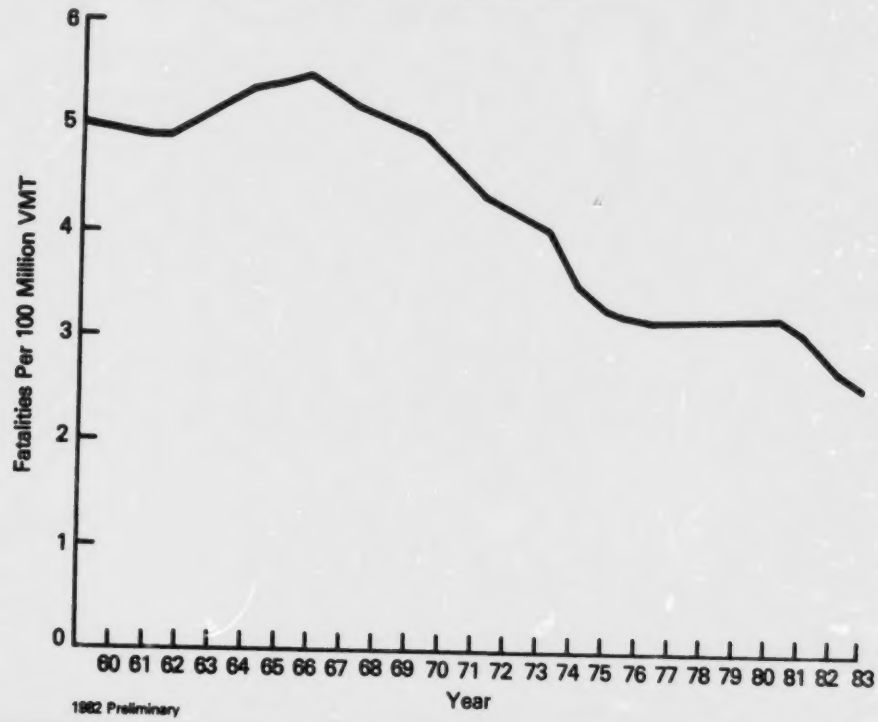
Fatality Rate

The fatality rate, the number of fatalities per 100 million vehicle miles of travel, also declined between 1982 and 1983, from 2.76 to 2.57, the lowest rate ever recorded.

The fatality rate is a measure of the risk of death that a person is exposed to when travelling. In 1940, about 10.9 persons died for each 100 million miles of motor vehicle travel. The fatality rate decreased to 4.9 in 1961. But in 1962, the downward trend reversed and in 1966, when legislation was passed to create a national traffic safety program, the fatality rate per 100 million miles had climbed to 5.5. After 1966, the rate began to decline again. If the 1966 fatality rate had been experienced in 1983, more than 91,000 persons would have lost their lives in traffic accidents.

If vehicles and roads are safer and drivers are becoming more aware of the dangers of drunk driving and the life-saving benefit of safety belts and child safety seats, why hasn't even more progress been made in reducing the annual fatality toll? The answer is that there have been large increases in people, drivers, cars, and travel. Over the last decade, population increased by 12 percent, motor vehicles by 37 percent, drivers by 28 percent, and travel by 32 percent. During this same period, the ratio of vehicles to population increased by 22 percent, and the ratio of licensed drivers to population increased from 57 percent to 65 percent.

Figure 2. **U.S. Traffic Fatality Rate by Year — 1960 to 1983**



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Program Emphasis

Nearly every death and injury on American roadways can be traced in part to some human factor: the driver or passenger who was not using a safety belt; the drinking driver who continues to be involved in more than half of the nation's traffic fatalities; or repeat violators who, due to deficiencies in a state's traffic records systems, elude the enforcement efforts that would otherwise revoke their privilege to drive.

In 1983, NHTSA pursued a highway safety program that was designed to reduce deaths and injuries most effectively. Greater emphasis was placed on the human aspects of traffic safety, reflecting the national concern that emphasis be on those activities that have the most realistic prospect of success and those that would obtain the maximum safety gains per dollar invested. This approach enabled the agency to pursue measures that upgraded vehicle safety performance, and emphasized public education to foster a better understanding of the risks and consequences of driving.

A careful review of each of the agency's research and demonstration projects was conducted to develop a safety priorities plan that allocates resources according to program priorities. The Safety Priorities Plan, which was published for public comment in April 1983, based motor vehicle and highway safety research priorities on the magnitude of the safety problem, potential safety benefits, and cost considerations. It also described NHTSA's objectives to reduce traffic casualties.

To ensure accomplishment of these objectives, the agency conducted bi-monthly priority planning and review meetings to measure progress and consider proposed changes in priorities or programs.

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Table 3. National Highway Traffic Safety Administration
Historical and Legislative Background

Year	Traffic Fatalities		Public Law
1924 to 1966	18,400 50,894	Federal Government organizations concerned with highway safety: Department of Health, Education and Welfare Department of Commerce Post Office Department Department of Defense General Services Administration Interstate Commerce Commission Interdepartmental Highway Safety Board President's Committee for Highway Safety	
1924	18,400	National Conference on Street and Highway Safety (convened by Secretary of Commerce, Herbert Hoover)	
1937	37,819	Second National Conference on Street and Highway Safety Report, Guides to Traffic Safety	
1946	31,874	Third National Conference produced an Action Program for Highway Safety.	
1954	33,890	The President's Committee for Traffic Safety established and adopted the Action Program.	
1956	37,965	First Congressional interest: Subcommitee Health and Safety of the House Committee on Interstate Commerce	
1958	35,331	Secretary of Commerce authorized to assist in carrying out the President's Action Program and to cooperate with the States in furthering highway safety.	
		Interstate Compacts for Traffic Safety (Beamer Resolution)	P.L. 85-684
1959	36,223	Report by the Secretary of Commerce to Congress on magnitude of traffic safety problems and the role the Federal Government should play in attacking them	

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Year	Traffic Fatalities		Public Law
		Requirements for Passenger-Carrying Motor Vehicles Purchased for Use by the Federal Government to Meet Certain Safety Standards	P.L. 85-515
		Prohibition of Use in Commerce of Any Motor Vehicle Which Discharges Substances in Amounts Found by the Surgeon General to Be Injurious to Human Health	P.L. 86-493
1960	36,399	Registration of Automobile License Revocations (National Driver Register)	P.L. 86-660
		Amendments	P.L. 87-359
		Amendments	P.L. 89-563
1961	36,285	Requirements for Passenger-Carrying Motor Vehicles for Use by the Federal Government to Meet Certain Safety Standards	P.L. 88-515
		Hydraulic Brake Fluid Specifications	P.L. 87-637
1962	38,980	Standards for Automobile Seat Belts Sold or Shipped in Interstate Commerce	P.L. 88-201
1965	47,089	Amendment to the Federal-Aid Highway Act providing for Voluntary State Highway Safety Standards (Baldwin Amendment)	P.L. 89-139
1966	50,894	National Traffic and Motor Vehicle Safety Act of 1966 established the National Traffic Safety Agency in the Department of Commerce.	P.L. 89-563
		Highway Safety Act of 1966 established the National Highway Safety Agency in the Department of Commerce.	P.L. 89-564
		Department of Transportation Act of 1966.	P.L. 89-670
1970	52,627	National Traffic and Motor Vehicle Safety Act of 1966, amendments	P.L. 91-265
		Federal-Aid Highway Act of 1970, created National Highway Traffic Safety Administration.	P.L. 91-605

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Year	Traffic Fatalities		Public Law
		Report of the President's Task Force on Highway Safety: Mobility Without Mayhem	
1972	54,589	Motor Vehicle Information and Cost Savings Act	P.L. 92-513
		National Traffic and Motor Vehicle Safety Act Amendments of 1972	P.L. 92-548
1973	54,052	Federal-Aid Highway Act of 1973	P.L. 93-87
1974	45,196	Motor Vehicle and Schoolbus Safety Amendments of 1974	P.L. 93-492
1975	44,525	Federal-Aid Highway Amendments of 1974	P.L. 93-643
		Energy Policy and Conservation Act established the Automotive Fuel Economy Program by adding a new Title V to the Motor Vehicle Information and Cost Savings Act.	P.L. 94-163
1976	45,523	Federal-Aid Highway Act of 1976	P.L. 94-280
		National Traffic and Motor Vehicle Safety Act Amendment and Authorization	P.L. 94-346
		Motor Vehicle Information and Cost Savings Act Amendments of 1976	P.L. 94-364
1977	47,878	Auto Fuel Economy Program amendment, contained in the Department of Energy Organization Act	P.L. 95-91
1978	50,331	Highway Safety Act of 1978 (included as Title II of the Surface Transportation Assistance Act of 1978); also includes an amendment to Section 158(b) of the National Traffic and Motor Vehicle Safety Act of 1966.	P.L. 95-599
		Auto Fuel Economy Program amendments, contained in the National Energy Conservation Policy Act.	P.L. 95-619
1980	51,091	Automobile Fuel Efficiency Act of 1980 amending Title V of the Motor Vehicle Information and Cost Savings Act	P.L. 96-425

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Year	Traffic Fatalities		Public Law
1981	49,301	Omnibus Budget Reconciliation Act of 1981, Title XI, Sections 1107-1109 amending the Highway Safety Act	P.L. 97-35
1982	43,945	Motor Vehicle Safety and Cost Savings Authorization Act of 1982	P.L. 97-331
		Alcohol Incentive Grant Program and National Driver Register Improvements	P.L. 97-364
1983	42,584	Highway Safety Act of 1982 (included as Title II of the Surface Transportation Assistance Act of 1982)	P.L. 97-424

Source: Fatalities: 1924-74, National Center for Health Statistics, HEW, and State annual summaries (adjusted to 30-day deaths). 1975-1983, Fatal Accident Reporting System (FARS) NHTSA.

* Traffic fatalities are deaths from motor vehicle accidents occurring on trafficways. Statistics represent deaths occurring within 30 days after the date of the accident, which constitute approximately 98 percent of all traffic deaths.

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Highway Safety Program Activities

The Highway Safety Act of 1966 created a partnership among federal, state, and local governments to improve and expand the nation's highway safety activities. The initial effort consisted of a series of Highway Safety Program Standards (initially 13, now 18) and federal financial assistance. Of the 18 standards, 3 are administered by the Federal Highway Safety Administration, one is administered by both FHWA and NHTSA, and the balance by the National Highway Traffic Safety Administration.

Federal financial assistance is based upon Sections 402 and 403 of Title 23, U.S.C. Funds made available under those sections are commonly referred to as "402 funds" and "403 funds."

Funds under Section 402 are made available each year to states, territories, Indian reservations, and other jurisdictions. They are distributed according to population (75 percent) and road mileage (25 percent) to support state planning and programming, and as start-up or "seed" money for new programs, or to give new direction to existing ones.

The 403 funds are used for research and development, to establish safety training programs and to fund projects which demonstrate new lifesaving techniques. These efforts are carried out by private groups, colleges, universities, states, and municipalities that are under contract to NHTSA or FHWA.

Highway Safety Program Standards

Standard No. 1, "Periodic Motor Vehicle Inspection" (NHTSA). To increase the likelihood that every vehicle operated on public highways is properly equipped and maintained in reasonably safe working order.

Standard No. 2, "Motor Vehicle Registration" (NHTSA). To provide a means of identifying the owners and characteristics (make, model, model year, size, weight, and carrying capacity) of all vehicles licensed to operate in a state, and to make such data available for traffic safety research,, accident investigation, enforcement, and other operational uses.

Standard No. 3, "Motorcycle Safety" (NHTSA). To ensure that all motorcycles, their operators, and passengers meet safe operation and injury protection criteria.

Standard No. 4, "Driver Education" (NHTSA). To ensure that all eligible high school students and adults have an opportunity to enroll in a course to train them to drive skillfully and safely under all traffic and roadway conditions.

Standard No. 5, "Driver Licensing" (NHTSA). To improve the quality of driving on public roadways by implementing more effective and uniform licensing procedures.

Standard No. 6, "Codes and Laws" (NHTSA). To eliminate major variations in traffic codes, laws and ordinances among political subdivisions in a state, and to further the adoption of appropriate aspects of the Rules of the Road section of the Uniform Vehicle Code.

Standard No. 7, "Traffic Courts" (NHTSA). To provide prompt, effective, and impartial adjudication of proceedings involving motor vehicle laws.

Standard No. 8, "Alcohol in Relation to Highway Safety" (NHTSA). To increase and broaden the activities directed toward reducing alcohol-related traffic accidents.

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Standard No. 9, "Identification and Surveillance of Accident Locations" (FHWA). To identify highway locations that have high or potentially high accident experience, as a basis for establishing priorities for roadway improvements, selective enforcement, and other operational practices to reduce or eliminate these hazards.

Standard No. 10, "Traffic Records" (NHTSA). To improve the quality of statewide traffic records systems so that all necessary data are readily available to the state and local agencies responsible for highway safety.

Standard No. 11, "Emergency Medical Services" (NHTSA). To provide an emergency care response system that will quickly identify accident locations, sustain life through first aid at the scene and in transit, and coordinate the transportation and communications necessary to deliver medical care to the injured in the shortest practicable time, without creating additional hazards.

Standard No. 12, "Highway Design, Construction, and Maintenance" (FHWA). To maintain existing roads in a safe condition, modernize or build new roads that meet safety standards, and to protect motorists and workers from accidents at highway construction sites.

Standard No. 13, "Traffic Engineering Services" (FHWA). To ensure the application of modern traffic engineering principles and uniform traffic control standards to reduce the likelihood and severity of accidents.

Standard No. 14, "Pedestrian Safety" (NHTSA and FHWA). To recognize pedestrian safety as an important element in community and highway transportation planning, and to ensure continuing programs to improve the level of safety by each state and its political subdivisions.

Standard No. 15, "Police Traffic Services" (NHTSA). To improve police services in accident prevention, traffic supervision, post-accident procedures, and law enforcement.

Standard No. 16, "Debris Hazard Control and Cleanup" (NHTSA). To assign official responsibilities for the planning, training, coordination, and communications needed to promptly correct potential traffic dangers.

Standard No. 17, "Pupil Transportation Safety" (NHTSA). To reduce the threat of death or injury to school children while they are being transported to and from school or related events.

Standard No. 18, "Accident Investigation and Reporting" (NHTSA). To establish a uniform, comprehensive accident investigation program to collect information on traffic accidents, and to make provisions for entering the information into a state's traffic records system.

402 Program Management

Before the 402 program was established, there was no overall coordination of highway safety activities conducted within a state, no detailed analysis of state highway safety problems, and no plan for solving the problems.

Now, each state has a highway safety agency that is responsible for providing coordination and guidance for all highway safety programs. NHTSA helps the states in carrying out their plans by offering program manuals and training courses for highway safety program managers. It also helps the states to identify their safety problems and to evaluate and disseminate the results of projects so the entire traffic safety community can benefit from the information.

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402 Program Activities

The 402 grant process has been successful in directing resources to national and state priority safety programs and in carrying out countermeasures that offer the greatest potential for success.

The Omnibus Budget and Reconciliation Act of 1981 required NHTSA and FHWA to identify program areas found to be most effective in reducing traffic accidents, injuries, and deaths. In determining which programs should receive national attention, NHTSA and FHWA considered the magnitude of each safety problem, the national trend or direction of the problem, the impact of existing countermeasures, and the potential for increased safety improvement. Alcohol countermeasures, police traffic services, occupant protection, emergency medical services, traffic records, and safety construction and operational improvements[1] were determined through rulemaking to have the most promise most for reducing accidents, injuries, and fatalities.

Of the $91.8 million in federal 402 funds obligated by the states in FY 1983, more than 95 percent was used for these priority programs.

NHTSA 402 program activities and accomplishments during 1983 included:

Alcohol Safety

- A total systems approach to the drinking driver problem through enforcement, adjudication, legislation, and public information programs.
- Arrests for driving while intoxicated (DWI) increased from about 600,000 in 1970 to more than 1,800,000.
- All states are now using breath testers as the primary method of determining blood alcohol concentration (BAC).

Police Traffic Services

- Selective enforcement at frequent accident locations, general deterrence of dangerous drivers, obtaining support and acceptance by prosecutors and judges of evidentiary devices used in speed measuring, and state and local public information campaigns on enforcement.

Emergency Medical Services

- Basic and refresher training and certification of emergency medical technicians, and assuring the use of proven life-sustaining practices at accident scenes.
- Eighty-five percent of ambulance technicians now have basic emergency medical care training, up from 13 percent in 1959. Statutes in 45 states now provide for paramedic training.

Traffic Records

- Adequate, efficient, and readily accessible record systems and data retrieval techniques for problem identification and analysis.
- The number of states and territories with some form of automated accident files has increased from 9 in 1966 to 55.

Occupant Protection

- Safety belts and child safety seats public information and education campaigns.

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[1]Listed in Part II of the report.

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- Forty-one states and the District of Columbia had child passenger protection laws.

Alcohol Incentive Grants

The Alcohol Traffic Safety Programs (P.L. 97-364), enacted in 1982, provided up to $125 million over the subsequent 3 years as an incentive for state and community leaders to place a higher priority on dealing with the drunk driver problem.

The Act established a two-tier grant system. The first tier is a basic grant in the amount of 30 percent of each state's fiscal year 1983 apportionment under Section 402 of the Highway Safety Act. The second tier is a supplemental grant of up to an additional 20 percent of the fiscal year 1983 amount apportioned to a state under the Highway Safety Act. A state becomes eligible for the supplemental grant if it qualifies for the basic grant and implements additional alcohol traffic safety programs, which were specified in the final rule that was issued February 7, 1983.

This funding is to be used as seed money to assist and reward states that establish effective comprehensive programs to deter drunk driving, and assure certain and swift arrest, conviction, punishment, and rehabilitation of drunk driving offenders. Funds that states receive under this program may be used only for alcohol traffic safety purposes.

Twenty states applied for incentive grant (Section 408) awards during 1983. Of these, thirteen states were qualified for the grants and received awards in 1984. These included: Alaska, Arizona, Delaware, Indiana, Maine, Mississippi, Montana, Nevada, New Mexico, New Hampshire, North Dakota, New Jersey, Rhode Island, and Utah.

The alcohol incentive grant program was not intended as a substitute source of funding for state alcohol countermeasure programs supported by the regular state and community grants or other financial resources. The enabling legislation clearly states that alcohol incentive grants are intended to act as a catalyst for the states to expand their efforts over and above the base level so that permanent results can be achieved. Moreover, the incentive grant program and NHTSA's alcohol program are designed to be mutually reinforcing and to encourage state and local anti-drunk driving programs to become eventually self-sufficient.

Alcohol Research

NHTSA continued to develop and test new techniques to assist state and local efforts to reduce drunk driving. During 1983, research emphasis was on enforcement methods and techniques, and public information to deter drunk driving.

Specific activities to assist state and local efforts included:

- A report that documents the legal issues associated with the use of safety checkpoints for DWI enforcement and provides information on setting up these checkpoints.

- A training program for a behavioral test battery that the police use at the roadside (once they have stopped a DWI suspect) to help determine whether the driver is, in fact, alcohol impaired. This test battery consists of the eye-gaze nystagmus, walk a straight line, and one-leg stand tests.

- A field test of promising general deterrence enforcement and public information programs was underway in three test localities.

Occupant Protection

In 1983, 29,139 occupants of automobiles, light trucks, vans, and multipurpose vehicles lost their lives in

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crashes. About 21,100 of these were in the front seats of automobiles. Many of them would still be alive if they had been using a safety belt. Lap and shoulder safety belts, when used properly, are estimated to be 40 to 50 percent effective in preventing fatal injuries and 45 to 55 percent effective in preventing moderate to critical injuries.

Based on 1983 statistics, if safety belt usage in the front seats of passenger cars increased 40 to 70 percent, an additional 2,800 to 5,800 lives could be saved each year. Yet despite their simplicity and availability, observational surveys in 19 cities found that only about 14 percent of American drivers use them regularly. Child safety seat usage rates are much better, however, with 60 percent of the infants and 38 percent of the toddlers observed in these devices in 1983; the high usage rate is partially due to the large number of states that have adopted laws requiring the use of a child safety seat.

In national studies, motorists have reported several reasons why they do not use safety belts: being forgetful (13.9 percent), finding belts inconvenient (15.1 percent), and finding belts uncomfortable to use (13.2 percent) are the reasons given most frequently. Other responses indicate a lack of perception of the risks involved in driving and misunderstandings about the function and effectiveness of safety belts.

During the year, the agency conducted telephone surveys to measure the public awareness of safety belt and child safety seat messages. The level of awareness increased from 52 percent in April 1982, to 71 percent in December 1983.

National Safety Belt Campaign

NHTSA's National Safety Belt Campaign uses the influence, credibility and communication abilities of employers, schools, and civic and social organizations to inform the public of the importance and effectiveness of safety belts and child safety seats, and persuade them to use the devices every trip.

The objective of this "networking" is to encourage interested organizations to develop safety belt and child safety seat programs, and build coalitions of organizations at the local level so that the combined efforts and resources of several groups can be applied to encourage safety belt/child seat usage.

The long-term effort combines public information, education, and incentive programs to encourage and reward usage, and requires safety belt use policies for public and private employees. During 1982 and 1983, national organizations have contributed more than $40 million in resources to the National Safety Belt Campaign.

The news media are encouraged to support the effort by using NHTSA's public service materials and by mentioning belt use--or nonuse--in news accounts of motor vehicle accidents.

The Campaign has established working relationships with educational, health, medical, civic, and social service organizations, as well as with businesses, corporations, government agencies, the U.S. Armed Forces, consumer groups, and law enforcement agencies. More than 50 formal contracts and/or agreements have been made to carry out planned activities. Among the participants are groups such as the American Red Cross, American Public Health Association, American College of Preventive Medicine, American Academy of Pediatrics, General Federation of Women's Clubs, National Extension Homemaker's Council, American Women of Radio and TV, and National Congress of Parents and Teachers.

Many of these groups have been supplied with audiovisual and print materials, and they are conducting

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activities to educate and motivate their members or constituencies. The materials provided are designed to help them cover the information that is necessary to convince the public to wear safety belts.

Here are some examples:

- Educators. Many elementary, high school, and driver education teachers were provided audiovisual materials to help them teach crash dynamics and the effectiveness of safety belts and child safety seats.

- Health Care Professional Groups. Physicians, particularly pediatricians, are talking to their patients and working with hospitals and health clinics on the need for safety belts and child safety seats. They also are providing leadership by working with the local news media, making speeches, and encouraging child seat loaner programs.

- Employers. Many employers, large and small, are educating their employees on the benefits of safety belt use and establishing mandatory belt use policies for employees while on company business.

- Military. The armed forces have issued and are enforcing safety belt use regulations for persons entering, visiting, and leaving military bases, and are conducting educational programs for military personnel, their dependents, and civilian employees.

- Auto companies and trade associations. Auto companies and their trade associations are developing national public information programs on occupant crash protection, and encouraging dealers to promote safety belts and child safety seats.

- Insurance companies. Insurance companies are educating their policyholders on the need for occupant crash protection and participation in nationwide public information and education programs. Some are providing additional coverage for injuries resulting from crashes when safety belts were used and selling child safety seats at a very reasonable cost.

- Law enforcement officials. More and more police officers are filing accident reports that indicate the use or nonuse of safety belts in crashes and, during routine traffic enforcement, are reminding motorists to use their belts. Many state police administrators require their troopers to use safety belts.

An employer's handbook was developed to provide corporate executives and their staffs with information on how to develop a safety belt program. Hundreds of copies of an introduction to employer's programs on safety belt use, incentives, and other programs were distributed to state, local, and corporate officials.

The federal government employee safety belt program was announced in January 1983 by the Secretaries of Transportation and Labor in a joint letter to all Department and independent agency heads asking that each include programs to increase employee safety belt use. Eleven federal departments or agencies employing more than 2.3 million workers now have mandatory safety belt use policies for employees driving on official business.

The Department of Transportation, using a combination of mandatory use policy for on-the-job driving, education, management commitment and incentives, increased observed safety belt use among employees using garages in DOT's three Washington headquarters

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buildings from 23 percent to 64 percent in 1983.

Child Safety Seats

Twenty-two additional states and the District of Columbia passed child safety seat laws during the year, bringing the total to 41 states (plus D.C.) with child passenger protection laws. These laws are having a significant impact. Based on NHTSA's 19-city survey conducted during the period of October through December 1983, about 40 percent of the infants and toddlers observed in cars were using child safety seats--an 18 percent increase over the previous year.

Arguments that these laws are unenforceable, an economic burden on parents, and an infringement on parental responsibility have been giving way to the realization that use of a child safety seat is the most effective measure that can be taken to reduce the number of infant and toddler deaths and injuries caused by motor vehicle accidents.

Incentive programs and public information and education campaigns are being carried out throughout the nation in concert with mandatory use laws. Nearly all states and many private organizations have organized child seat loaner programs to provide child seats for the children of parents who cannot afford to purchase one.

NHTSA worked closely with health service agencies and other organizations to educate their constituencies on the benefits of using child safety seats and to encourage their use. The agency also provided technical assistance to these groups to support their legislative and seat loaner activities.

State Occupant Protection Activities

During FY 1983, the states spent about $6.7 million of Section 402 funds for programs to increase safety belt/child safety seat use.

An important development during 1983 was the agency's success in encouraging communities to develop programs that include the same basic components as the national safety belt campaign: face-to-face education through a variety of "networks", the use of mass media programs, incentive programs, and required-use policies. At the end of the year, at least 15 of these community programs were in operation or being developed. For example, in Helena, Montana, safety belt use increased from 4 to 21 percent in 7 months. In Chapel Hill/Canboro, North Carolina, use increased from 24 to 42 percent in 8 months.

Public information and education materials on child safety seats were developed by states and distributed through health care and service facilities, such as clinics, hospitals, prenatal courses, day care centers, and preschools. Training was provided to health care personnel and DOT-approved child safety seats were displayed publicly.

States also developed and distributed instructional materials to public schools. Hundreds of school districts across the country received brochures, pamphlets, posters, slide shows, and films.

Section 402 funds were spent by a number of states to produce radio, television, and print public service announcements designed by them to reach important target groups. Most of this work was accomplished under contract with public relations contractors and/or state universities with media production facilities. Sharing of these materials among the states is fostered through a Section 403-funded clearinghouse, which collects, catalogs, and loans copies for reference or duplication.

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Drunk Driving

Drunk driving continues to be one of the nation's most serious public health and safety problems. Alcohol is involved in 50 to 55 percent of all fatal traffic accidents. More than one out of two Americans will be involved in an alcohol-related traffic crash in their lifetime.

The fatally injured victims of alcohol-involved crashes include: alcohol-involved drivers, 52 percent; drinking pedestrians, 11 percent; passengers in the drinking driver's vehicle, 20 percent; and passengers, drivers or pedestrians not in the drinking driver's vehicle, 17 percent.

Although drunk driving is a problem that affects all age groups, it is especially severe for young people; nearly 8,000 people between the ages of 15 and 24 were killed in 1982 in alcohol-involved crashes.

Drivers between the ages of 16 and 24 have fatal accident rates per miles driven that are twice that of older drivers. Where alcohol is involved, their fatal accident rate is three times greater. Although this same age group comprises only 20 percent of the licensed drivers in this country, and account for less than 20 percent of the total vehicle miles traveled, they are involved in 42 percent of all fatal alcohol-related crashes.

Past drunk driver control programs have focused primarily on those who have been arrested, using treatment instead of sanctions or, when sanctions were used, imposing them at a minimum level. In considering new approaches to cope with drunk drivers, NHTSA concluded that sanctions for those arrested should be combined with a new strategy to identify and deter the intoxicated person from driving in the first place. The need to deter those who have never been arrested is based on NHTSA findings that show that even an effective program for rehabilitating those who are apprehended would reduce future alcohol-related crashes by only about one percent.

The ultimate responsibility for solving the drunk driving problem must be accepted in the cities, towns, and counties where the social attitudes toward drinking and driving are established and where the tragic consequences are felt. Citizens, parents, young people, schools, churches, businesses, fraternal and service organizations, the news media, enforcement, courtroom and treatment personnel, and driver licensing officials at the local level must work in unison to reduce the incidence of this widespread social problem.

The state government's role is to establish and enforce drunk driving laws. The federal government's role is to help create a national awareness about the magnitude and implications of the problem and support and encourage the states and localities through a program of countermeasure research and technical and financial assistance.

NHTSA's emphasis on the drunk driving problem involves a six-point program at the state and local levels:

- General deterrence. Conducting programs to convince those who drink that there is a high risk of being arrested.
- Community focus. Placing program emphasis and responsibility at the local level.
- Systems approach. Coordinating enforcement, prosecution, adjudication, education/treatment, public information/education, and licensing functions at the local and state levels.
- Programs funded by the offenders. Having convicted offenders pay fines, court costs, treatment and tuition fees, etc., to defray local/community program costs.

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- Citizen support. Encouraging community/citizen support for comprehensive community programs (i.e., creating a political base for increased countermeasure activity).

- Prevention. Changing social attitudes and norms toward drinking and driving through long-term prevention/education programs.

Reducing the drunk driving problem requires a combination of the previous elements along with these specific community programs:

- Adequate enforcement and public education efforts.

- A statewide driver record system easily accessible to the courts, and capable of identifying repeat offenders.

- A provision for administrative license suspension, revocation, or restriction by the state licensing agency for all first and subsequent offenders, and empowering courts to make recommendations on such license action.

- A provision that gives the courts the following sanction options for persons convicted of driving under the influence: (a) for first-time offenders, community service, fines, and participation in either a safety program or treatment program; (b) for repeat offenders, community service, imprisonment or both, as well as fines and participation in a treatment program.

- A provision for a financially self-sufficient, locally-administered program in each major political subdivision.

"Targets of Opportunity"

The contracts NHTSA awarded in late 1982 to 10 state highway safety agencies for joint federal/state evaluations of community highway safety projects to keep drunk drivers off the road were in operation in 1983. These "targets of opportunity" each received $50,000 to evaluate the adoption of comprehensive, community-based, general deterrence programs.

By concentrating a significant part of its resources on these specific sites, NHTSA expects to demonstrate successful models that other local communities and states can follow. The program will also strengthen local management and coordination of drunk driving programs, law enforcement, public information, prosecution, adjudication, license suspension, and public education efforts to deter potential drunk drivers.

NHTSA will provide assistance in evaluating, training, expanding private sector involvement and developing citizen support, as well as technical assistance in program areas. The agency will also maintain a clearinghouse, serving as a resource for informing other states and communities of successful techniques and programs.

The sites chosen were the State of Delaware; Miami-Dade County, Florida; Coconino and Yavapai Counties, Arizona; the City/County of Spokane, Washington; Salt Lake County, Utah; Nassau County, New York; and the cities of of Lynn, Massachusetts; Springfield and Waukegan, Illinois; Baton Rouge, Louisiana; and Wichita, Kansas.

The criteria used in selecting the cities were: willingness on the part of the local government to establish a comprehensive drunk driver control system; evidence of community support; potential for success; legislative, economic, and political climate for supporting changes in laws and practices; and capability for evaluation.

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State and Local Drunk Driving Activities

The continued public awareness and outrage about drunk driving that have been building over the past few years have resulted in improved laws, stricter enforcement, and innovative local programs in many parts of the country. NHTSA continued to provide technical assistance to states and communities involved in public communications about alcohol and drunk driving. This assistance was in the form of workshops, site visits, and the development of films, videotapes, and print materials. Public information is a necessary part of drunk driving enforcement because it increases public awareness and encourages the social and attitudinal changes that are needed to discourage people from driving after drinking.

NHTSA also urged the formation of state task forces to assess deficiencies in programs, to deter drunk driving, and to develop recommendations for reducing alcohol-related traffic crashes. By the end of 1983, task forces had been appointed in 41 states. Their efforts have resulted in comprehensive plans to alleviate current drunk driving problems by strengthening laws, closing loopholes, and recommending more stringent regulations and policies.

During the year, 772 pieces of legislation concerning drunk driving were introduced in 40 state legislatures, resulting in 129 laws increasing the severity of the penalties for drunk driving offenses. Three states raised the minimum legal drinking age to 21.

Sixteen states enacted legislation permitting the administrative suspension of the driver's license after an arrest for drunk driving. Administrative suspension authority is endorsed by NHTSA because it reduces the period of time between the offense and punishment, and is a sanction that research has shown to be effective in preventing violations and accidents.

Fifteen states established specific (per se) levels of blood alcohol concentration as a definition of intoxication in connection with motor vehicle operation. Thirty-nine states now have laws mandating jail or community service for persons convicted of DWI more than once. Nineteen of these laws were enacted in 1983.

Oregon and Utah made substantial changes, including lowering the illegal per se blood alcohol level .10 percent to .08 percent.

Rhode Island, with the joint sponsorship of the Rhode Island Broadcasters Association, conducted a seven-week public information/awareness campaign. The campaign used donated materials and services from the Council of Churches, the leading newspaper, and the outdoor advertising industry. These efforts resulted in spinoff activities such as employer "payroll stuffer" programs, promotion of the State Police drunk driving hotline by the New England Telephone Company and the formation of new chapters of Mothers Against Drunk Driving (MADD) and Students Against Drunk Driving (SADD).

Florida completed the development of a model alcohol safety curriculum for students in elementary, junior high, and high school. The course was field tested in 16 schools and presented to thousands of students and parents. The social fraternity, Kappa Sigma, has obtained permission to distribute the curriculum as part of its international "My Brother's Keeper" program and to encourage its adoption and use in high schools throughout the U.S. and Canada.

The cities of Jackson and Pascagoula, Mississippi, increased drunk driving arrests by 279 percent and 334 percent, respectively. This increase in enforcement was accompanied by significant reductions in both injury and fatal

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alcohol-related accidents. The programs in both cities also included an expanded program for post-conviction placement of offenders into rehabilitation appropriate to the individual's pattern of alcohol dependency.

In Oklahoma, the Highway Safety Office and the Alcohol Control Board joined forces to encourage liquor store owners and bartenders to communicate alcohol abuse information and modify alcohol consumption laws to patrons and to the general public.

In Nebraska, officials of the Omaha Transit Authority and the Lincoln Transit System ran a special bus service on New Year's Eve. A total of 1,543 residents of the two cities were provided free, safe rides home from their New Years' parties; neither city had a traffic fatality during the service period. The service was well-publicized prior to the holiday and the number of riders exceeded the level expected.

Drunk and Drugged Driving Awareness Week

At a special White House ceremony attended by leaders of safety, business, and trade groups, President Reagan issued a formal proclamation declaring December 11-17, 1983, "National Drunk and Drugged Driving Awareness Week." Many governors issued similar proclamations and every state, numerous municipalities, and citizen activist groups conducted special campaigns, news events, and other activities to heighten public awareness of the drunk driving menace.

The result: traffic fatalities during the 1983 Christmas and New Year holidays were the lowest ever recorded.

Examples of state activities during the week were:

- New York — On December 12, Nassau County cab companies and bar owners had a safe ride program in cooperation with the County Executive's initiatives for Awareness Week.
- Alabama — Operation REDD (Report Every Drunk Driver) was implemented statewide. Billboards, public service announcements, and bumper stickers were developed to support REDD.
- District of Columbia — The Washington Regional Alcohol Program and the Greater Washington Board of Trade sent out packets of information to board members, suggesting ways they could help fight drunk driving over the holidays.
- Illinois — The governor, in declaring National Drunk and Drugged Driving Awareness Week, appointed a task force to study the drunk and drugged driving problem in Illinois.
- Arizona — The Phoenix Mothers Against Drunk Drivers (MADD) chapter organized a candlelight vigil on the steps of the state capitol.
- Oregon — In Portland, a pre-holiday "Dry Run" was held on the first day of Awareness Week. Eight hundred runners, including state legislators, county commissioners, the district attorney, and others participated in the run.

Police Traffic Services

More law enforcement agencies are reporting implementation of systems-oriented approaches as the solution to traffic safety problems. There also has been increased emphasis on safety belt and child safety seat usage programs and major gains in the effort to discourage drunk driving. For example, police agencies in Wichita, Kansas; Minneapolis, Minnesota; Santa Fe, New Mexico; and Greenville, South Carolina, have incorporated systems approaches to traffic law enforcement using 402 funds.

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They report dramatic decreases (as much as 32 percent) in accidents.

NHTSA's police traffic services activities during 1983 included:

- Law enforcement networking in the safety belt program was continued. Safety belt information and audio-visual kits were delivered to all state law enforcement agencies and local traffic law enforcement departments.
- Under NHTSA contract, the International Association of Chiefs of Police (IACP) distributed model speeches and press releases for use by law enforcement administrators to promote safety belt usage.
- The National Association of State Directors of Law Enforcement Training (NASDLET), under a NHTSA contract, began a series of safety belt training seminars for state/local law enforcement instructors. Model training materials were distributed to all police training facilities.
- Additional copies of NHTSA's emergency vehicle operators course were printed and distributed to police agencies. This course is now being certified by NASDLET for adoption as the required curriculum for police officers in at least 38 states.
- Model radar speed measuring device specifications were distributed nationwide.
- Twenty-three speed measuring devices available for purchase by law enforcement agencies were tested against specifications. (The test reports will be published and distributed by the IACP in 1984.)
- Continued demand for the NHTSA police radar training course required additional printing and distribution.
- Work continued on an updated model police traffic services policies, rules, and procedures manual.
- NHTSA supported the Annual Operation CARE (Combined Accident Reduction Effort) Program, a cooperative effort by state law enforcement agencies to reduce highway fatalities by increasing 55 mph speed limit enforcement and DWI enforcement during major holiday weekends.
- NHTSA staff provided technical advice to several state and local selective traffic enforcement projects.
- The agency worked with law enforcement organizations, police training institutions, and state/local police agencies to furnish information in high-priority traffic enforcement programs, changes in program priorities due to legislative actions, and to provide a forum for discussing enforcement problems and successes.
- NHTSA staff conducted safety belt/child safety seat seminars in Oklahoma, Arkansas and Mississippi.
- NHTSA's work with the National Commission on Law Enforcement Accreditation in developing police traffic services standards for accreditation was completed. More than 100 police agencies are expected to seek accreditation.

Emergency Medical Services

For thousands of traffic accident victims, prompt, appropriate medical care provided by an emergency medical services (EMS) team is the critical link between an accident site and a major medical facility.

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While an exact figure for the number of lives saved each year by EMS is difficult to determine, relative changes in trauma death rates following implementation of trauma care systems, which link sophisticated prehospital services with designated trauma hospital services, can reduce the likelihood that an accident patient will die.

1983 EMS activities included:

- NHTSA-sponsored research on "EMS Skill Deployment and Maintenance" was completed by the University of Pittsburgh. The final report, which will be published in 1984, documents the rate of omission of appropriate pre-hospital emergency medical care by EMS personnel for various types and severities of medical emergencies.

- A NHTSA-sponsored National EMS Management Information Systems Workshop in Harrisburg, Pennsylvania in October. More than 21 technical papers were presented and reviewed. These papers, together with workshop commentary that will be published in 1984, will provide states with guidelines for developing and operating effective statewide EMS management information systems.

- The September 1983 establishment of a networking program among states and EMS organizations and interest groups to develop voluntary national EMS standards. Guidelines for the EMS standards will be completed and ready for implementation in 1984.

- A June 1983 presentation at the Annual Meeting of the American Rural Health Association on "Social and Political Constraints on Rural Emergency Medical Services Developments." This report describes how planners for rural EMS systems may avoid political and social barriers to the development of EMS systems.

- A "management audit" and statewide peer-group review of a rural volunteer ambulance service in Massachusetts. The audit and review are being used as the basis for management guidelines for rural volunteer ambulance services. These guidelines will enable ambulance services to achieve economic self-sufficiency while providing quality, pre-hospital emergency medical care.

- A NHTSA-sponsored "Third Symposium on Traffic Safety Effectiveness (Impact) Evaluation Projects" at which a NHTSA-sponsored report, "A Comparative Outcome Evaluation of Emergency Medical Service Systems: A Feasibility Study," was presented by the University of Pittsburgh Health Operations Research Group. The evaluation methodology was presented and discussed as a possible model for evaluation of other complex highway safety programs.

- The implementation of a small-scale, Digitally Addressed Trunked Communications Systems (DATCS) in Oklahoma. DATCS, which is based on plans developed with NHTSA funding, permits all public safety services to share the radio frequency spectrum and communications resources needed for their individual operations. This permits improved communications between public safety services and results in better coordination of communications for traffic safety enforcement and for EMS response.

- The National Paramedic Revision Committee, with NHTSA funding, completed work on a comprehensive training and reference manual and workbook for paramedics.

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- Under NHTSA contracts, developmental work was completed on an EMS Instructor Training Curriculum and an EMS Dispatcher Training Curriculum. Both courses will be published in 1984.

- NHTSA continues to provide leadership to the Military Assistance to Safety and Traffic (MAST) Program. MAST provides available U.S. military aeromedical personnel, medical equipment, and aircraft to care for and transport civilian patients in need of emergency medical care. During the year, MAST flew 1,970 missions, resulting in the transport of 2,368 patients.

- A NHTSA co-sponsored National Med-Evac Helicopter Conference with the Maryland Institute for Emergency Medical Services Systems and the Helicopter Association International. This conference, which had nearly 200 national and international attendees, focused on the latest advances in rotorcraft and medical technology; the organization, cost, and operational utility of various public and private med-evac programs; the impact of med-evac on patient outcome; and government regulations and requirements for the siting, design, and construction of hospital heliports.

- Support for the interagency effort of the President's Emergency Management Preparedness Board. During 1983, the NHTSA representative on the Public and Professional Education and Information Task Force prepared the Request for Proposal that was used by the task force to award a contract to catalogue and evaluate information and education programs in the U.S. concerned with medical support in times of mass casualty or disaster situations.

Pupil Transportation

Pupil transportation is one of the largest and safest transportation programs in the U.S., carrying some two million children to and from school each day.

Most fatal school bus accidents do not involve school bus passengers. Instead, they typically involve a child being struck by the bus or another vehicle when approaching or getting off the school bus. The 155 fatal school bus-related accidents in 1983 resulted in the deaths of 19 school bus occupants, 50 non-occupants, 80 occupants of other vehicles, and 6 pedalcyclists.

NHTSA continued its efforts to reduce the chances of school bus accidents by encouraging states to select and train drivers carefully; adopt uniform school bus stop laws and bus identification; include safety instruction for all public riders; and perform routine maintenance and inspection of each vehicle. The most important of these measures is training to improve driver performance, since driver error is the leading cause of the approximately 55,000 school bus accidents each year.

Driver Licensing

NHTSA's driver licensing activities focused on alcohol-related "Administrative per se" license suspension or withdrawal, and provisional licensing of young drivers.

"Administrative per se" is defined as the immediate withdrawal or suspension of the license for persons who are charged with driving under the influence with a blood alcohol concentration of 0.10 or more. Pioneered by the District of Columbia and State of Minnesota, administrative suspension of the license prior to court appearance is now the law in 19 states. During 1983, 13 states adopted this concept: Alaska, Colorado, Indiana, Louisiana, Maine, Mississippi,

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Missouri, Nevada, North Carolina, North Dakota, Oregon, Utah, and Washington.

Provisional licensing is a three-phased licensing procedure that eases novice drivers into full driving privileges. Before operating a motor vehicle, new drivers must successfully complete a learning phase, which is more restricted and controlled than with "traditional" licensing practices.

The State of Maryland's provisional driver licensing program, for example, was designed to control the manner in which beginning drivers acquire driving experience. The assumption is that limited driving to low-risk situations, coupled with a period of supervised practice, would enable drivers to acquire safe driving skills and minimize the threat to themselves and the public.

Features of the Maryland provisional driver licensing program include the following: no driving between 1:00 a.m. and 6:00 a.m. unless accompanied by a licensed driver; six months of violation-free driving prior to receiving a regular license; and voluntary parent-supervised practice driving. The estimated benefits of the program were at least a 10 percent reduction in violations and 5 percent reduction in accidents during daylight hours.

In California, a law was passed that requires new 16- and 17-year-old drivers to complete 20 hours of behind-the-wheel practice supervised by a parent/guardian. A New York law requires persons driving with learner permits to wear their safety belts, and six states have nighttime restrictions or curfews for 16-17-year-old drivers.

Other features being considered by some states include mandatory seat belt usage for all occupants of a motor vehicle being driven by a minor; lower legal BAC levels for operators under age 18; parent-supervised safe driving instruction materials; special driver improvement programs and tests.

The Driver License Compact

Driver licensing programs could be improved by the implementation of the "one license - one record" concept. This would prevent drivers from obtaining licenses from more than one state, and from using multiple licenses to retain driver privileges after convictions resulting in revocation or suspension. Another purpose is to insure that a driver's entire driving record, including offenses committed in other states, is used to determine driving eligibility.

Thirty states have joined the Driver License Compact (DLC), agreeing not to license a person who holds a license from another state unless the out-of-state license is surrendered. In addition, participating states agree to forward information on certain convictions of out-of-state drivers to the home states.

The DLC was made possible by the Beamer Resolution (P.L. 85-684), which was adopted in 1958 by Congress. After a period of state cooperative work, the DLC was offered to all states for legislative enactment in early 1961. Nevada was the first state to enact it and subsequently 29 additional states have entered into this interstate agreement. The provisions of the DLC cannot be fully functional until all states have joined. A DLC Commission of member states was organized in 1983, with elected officers and bylaws, and plans were developed to promote the DLC during 1984-85 in all states.

The Nonresident Violator Compact

The Nonresident Violator Compact was developed in 1977 for NHTSA by the Council of State Governments to give out-of-state motorists cited for minor traffic violations the same equitable treatment as resident motorists.

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Nonresident motorists receiving traffic citations often experience delays in appearing before a judge for arraignment and the posting of a bond, inconveniencing the motorist and taking the enforcement officer away from normal duties. Other times, nonresidents are cited and permitted to continue on their way, but the citations are usually ignored.

The Nonresident Violator Compact provides an alternative. It allows cited nonresident motorists to continue on their way, but they are notified that if the terms of the citation are not met, the home state driver licensing agency will suspend the license until they are met.

Data collected during a NHTSA study of eight member jurisdictions showed the advantages of membership in the Compact. No state surveyed needed to increase the number of personnel to handle Compact responsibilities, since Compact activities are the usual functions of the agencies involved and impose only a small workload increase. States that collect reinstatement fees from suspended drivers collect more through this means than the incremental cost to the state of participating in the Compact.

The State Police in each jurisdiction found special benefits from Compact membership. For example, the Virginia State Police estimated a time savings of 45 man-years (based upon 2,000 working hours per year). Another way to express this is that it saves State Police officers the time equal to adding 45 additional officers to the force. Similar data showed that North Carolina "increased the size" of its Highway Patrol by 42 officers, and New York and Pennsylvania, by approximately 85 and 65 officers, respectively. These advantages made it possible to close additional cases, increase the total revenue collected as a result of those closures, and eliminate the issuance and execution of warrants.

These 33 states belong to the Nonresident Violator Compact:

Alabama	Kentucky	New York
Colorado	Louisiana	North Carolina
Connecticut	Maine	North Dakota
Delaware	Maryland	Pennsylvania
District of Columbia	Minnesota	South Carolina
Florida	Mississippi	South Dakota
Georgia	Misouri	Tennessee
Illinois	Nebraska	Texas
Indiana	New Jersey	Utah
Iowa	New Mexico	Virginia
Kansas	New Hampshire	West Virginia

Administrative Adjudication of Traffic Infractions

Administrative adjudication is the non-judicial processing of decriminalized traffic infractions, which includes most traffic offenses except for criminal ones, such as driving while intoxicated or reckless driving. Hearing officers or administrative law judges adjudicate these offenses by assessing penalties such as a fine, driver's license suspension, or referral to a driver education or training course. Administrative adjudication provides more speedy case processing and disposition, and frees the courts to handle more serious offenses.

A four-year administrative adjudication demonstration project supported by NHTSA 402 funds has been underway since 1980 in Sacramento and Yolo Counties, California. The final evaluation was completed. In terms of the major issues of the cost-benefit evaluation, it was concluded that:

- Administrative adjudication is more economical than present methods. It is estimated that a large-scale administrative adjudication system would process infractions for significantly less costs than the courts.

- Administrative adjudication is more expeditious than present methods.

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An accessible hearing process has been demonstrated, which disposes of citations more rapidly than court arraignments and trials.

- Administrative adjudication imposes more consistent and uniform sanctions on traffic violations than at present. The pilot program has demonstrated the capability to provide uniform procedures and sanctions throughout the state.

- There is no differential safety effectiveness between administrative and court adjudication of traffic infractions.

- Administrative adjudication is favorably received by the motorists.

Driver Education

In response to Section 226 of the Highway Safety Act of 1973, which directed NHTSA to conduct driver education evaluations, NHTSA conducted an experimental evaluation in DeKalb County, Georgia. The objective of the DeKalb County "Safe Performance Secondary School Driver Education Curriculum Demonstration Project" was to determine the crash reduction potential and the instructional effectiveness of a quality, competency-based driver education program known as the "Safe Performance Curriculum." The most highly developed safety course of its time.

The experiment involved random assignment of 18,000 volunteer high school students to one of three groups:

- Safe Performance Curriculum (SPC) - a 70-hour course including classroom simulation, driving range, and on-street training.

- Pre-Driver Licensing (PDL) - a modified curriculum containing only the minimum training required to obtain a license.

- Control - no formal driver education in the secondary school.

More than 16,000 students completed the courses at a cost of about $105 per student, compared to $120 for a typical driver education program. The students' driving records were monitored for two to four years following their training and comparisons were made to determine their driving performance, the effectiveness of the administrative costs, and personnel and equipment requirements.

The study results revealed that:

- In analyses controlling for time period of licensed driving, driver education groups (SPC, PDL) were found to have statistically significant lower accident and violation means (number of accidents and violations per person) than the Control group during the first six months of licensed driving. However, there were essentially no differences among SPC, PDL, and Control group accident means during the second, third, or fourth six-month periods of licensed driving.

- In those analyses where the entire driving records of all project students were examined, no statistically significant differences were found among the overall accident means of SPC, PDL, and Control groups students. These were the primary analyses directed toward the question of whether implementation of the SPC (or PDL) program in a school system results in a change in accident and violation occurrence.

- Females had significantly lower accident violation rates than males, and above average grade point students had significantly lower accident and violation rates than below average grade point students.

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Model Traffic Records System

A model traffic records system would use current electronic technology to combine data from various highway safety files to provide information about a state's total motor vehicle transportation system.

Alabama is developing a model system under a NHTSA contract. It is an ideal system design that will use current electronic data processing technology to integrate and process information on accidents, driver licensing, roadway inventories, driver histories, and other elements. The Alabama project will demonstrate for other states the technical feasibility of a model traffic records system and document the advantages of a completely integrated system in supporting system development, management, and evaluation of a state's traffic safety program.

The designs developed in earlier years of the project were implemented this year. This involved configuring the size and quality of the computer system required to store and utilize the data, filling the test data base, and operating the system to produce the data needed to meet design requirements. When completed in 1984 and 1985, system documentation will be made available to all states.

Uniformity of Traffic Laws

Because local differences in rules of the road and driver unfamiliarity with these differences can increase the likelihood of accidents, NHTSA has urged the states to adopt the model rules-of-the-road provisions of the Uniform Vehicle Code (UVC). The National Committee on Uniform Traffic Laws and Ordinances developed the UVC as a model statute covering all aspects of traffic law.

The number of substantive differences between UVC's rules of the road and those of the states declined from 303 in 1969 to 186 in recent years, a 39 percent improvement. Differences still exist, however, in such areas as right-of-way, traffic control devices, speed regulations, and motorcycles.

The number of state laws that differ from the Code provisions has been steadily decreasing. In 1958, only two states conformed with at least 70 percent of all of the model rules-of-the-road provisions of the UVC. Based on our most recent information, states with a 70 percent or better conformity rating are: Alabama, Colorado, Georgia, Idaho, Illinois, Kansas, North Dakota, Pennsylvania, South Carolina, Utah, and Washington.

Pedestrians

The results of a NHTSA study, "The Effect of Right-Turn-On-Red on Pedestrian and Bicycle Accidents," indicated that pedestrian and bicycle accidents increased significantly at all study sites after adoption of the right-turn-on-red rule.

To help overcome this and other pedestrian safety problems, NHTSA and FHWA jointly sponsored a National Pedestrian Safety Conference in Boulder, Colorado, September 20-21, 1983. The conference provided an opportunity to share materials and information to assist communities in reducing the most frequent causes of pedestrian accidents.

Motorcycles

Motorcycle accidents accounted for 4,264 deaths in 1983, a four percent decrease from the 4,453 deaths in 1982.

Motorcycle accident victims are predominantly young males and a high percentage of them had been drinking. Other factors that contribute to motorcyclist fatalities are motorists violating the motorcyclist's right of way, a lack of safe riding skills, and the failure of riders to wear a safety helmet.

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Helmets. Safety helmets are the most effective way to prevent or reduce the severity of head injuries in a motorcycle accident. Studies show that unhelmeted riders are at least three times more likely to incur fatal head injuries and twice as likely to incur nonfatal head injuries as helmeted riders.

Since enactment of the Highway Safety Act of 1976, which includes a provision that prohibits the Secretary of Transportation from withholding highway safety funds from a state that fails to require helmet use by persons 18 years of age or older, 29 states have either repealed or seriously weakened their laws that formerly required the use of safety helmets.

A study of the effect of helmet law readoption in Louisiana is being done by Tulane University under contract to NHTSA. Louisiana is the only state to readopt a helmet law after the 1975 Act.

The final report on the study will not be available until 1984. The following observations are based on preliminary analyses:

- There was a 30 percent decrease in fatalities during the year following helmet law readoption, while motorcycle regulations increased 1-2 percent during the year.
- Helmet use rates increased from about 60 percent in the year before helmet law readoption to more than 90 percent in the year following helmet law readoption.
- Unhelmeted riders were at least two times more likely to incur a head injury of any severity and at least three times more likely to incur a fatal head injury than were helmeted riders. These findings are similar to those found in prior state studies.

Operator Licensing. Improved operator licensing and education are also effective in reducing the number and severity of motorcycle accidents. An intensive program to encourage states to adopt an improved motorcycle operator licensing system began in 1979. The program includes a model motorcycle operators manual, a knowledge test, and an off-street skill test. The system was field-tested extensively in California, resulting in a 15 to 21 percent lower accident rate for those participating in the improved system, as compared with those participating in California's customary licensing system. By the close of 1983, 34 states had adopted the manual, 27 states had adopted the knowledge test, and 17 states had adopted the off-street skill test. Four other states adopted an in-traffic test, which was not part of the California project.

NHTSA maintained 16 sets of electronic control equipment to conduct the off-street skill testing. The equipment is available for loan to states that want to pilot or implement the improved skill test. The agency also provided technical assistance in operator licensing to Arizona, Connecticut, Illinois, New York, and Vermont.

Rider Education. The third year of a five-year motorcycle rider education evaluation project was completed. This project, conducted for NHTSA by the New York Department of Motor Vehicles, will determine the effectiveness of rider education courses in reducing crashes.

The project operated in Buffalo, Albany, Syracuse, and Schenectady, New York, in 1983. Motorcycle license applicants are assigned randomly to either a no-training control group, a three-hour training course, or to a twenty-hour training course. Applicants in the training groups, along with part of the control group, are then given an improved off-street skill test. Accident experience of the control and

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training groups will be followed for two years after completion of their training. Group records will be compared to determine the effectiveness of the training in reducing motorcycle crashes, and to compare the effectiveness of the three-hour training course versus the twenty-hour course.

In addition, NHTSA and the Department of Defense jointly sponsored six traffic safety workshops for civilian and military personnel, which included instruction on motorcycle safety.

Enforcement of the 55 MPH Speed Limit

All states continued to enforce the 55 mph national speed limit but enforcement levels and penalties in the states varied.

As required by the Surface Transportation Assistance Act of 1982, the Secretary of Transportation has contracted with the National Academy of Sciences for a comprehensive investigation of the human and economic benefits of the 55 mph speed limit. Particular attention will be given to taxpayer savings from the law and whether the laws of each state constitute a substantial deterrent to 55 mph violations. The study will be completed in 1984.

During early 1983, initial evaluation of the 55 mph enforcement certifications submitted by states for FY 1982 revealed that Massachusetts and Nevada reported noncompliance levels in excess of the 50 percent minimum established by the Omnibus Budget Reconciliation Act of 1981 (P.L. 97-35, August 13, 1981).

Following an informal hearing in Boston, Massachusetts, NHTSA concluded that Massachusetts could not justify the magnitude of the speed measuring equipment error it claimed and applied in developing the statewide percentage of motor vehicles exceeding 55 mph. Because the alleged equipment error adjustment was disallowed, the percentage exceeding 55 mph remained greater than 50 percent and Massachusetts was found to be not in compliance with Title 23 United States Code, Section 154(f).

The state would have been subject to a reduction in the state's FY 1984 apportionment of certain federal-aid highway funds, but Section 154(h) of Title 23 of the United States Code requires that any funds withheld under Section 154(f) must be apportioned promptly to the state if the percentage of motor vehicles exceeding 55 mph has dropped to or below the level specified for the fiscal year in which the funds were withheld. A FHWA and NHTSA review of the certification found the state to be in compliance with the 55 mph national maximum speed limit for FY 1983 and no penalty of the 1982 noncompliance was imposed.

Following a similar hearing in Carson City, Nevada, FHWA and NHTSA concluded that due to significant population shifts, certain roadways, ordinarily classified as rural in Nevada's 55 mph speed limit monitoring plan should have been categorized as urban in the FHWA 1982 statewide speed monitoring plan. As a result of the change in classification, the enforcement statistics were recalculated and the state met the mandated 50 percent compliance criteria, and the sanction was not applicable.

Initial review of the 55 mph compliance data submitted by all states for the most recent annual reporting period (FY 1983) indicated that only one state, Oklahoma, reported noncompliance in excess of the required 50 percent level (the state reported 50.6 percent of all monitored vehicles exceeded 55 mph). A final decision regarding Oklahoma's alleged noncompliance will not be made until after hearings and appeals are available to the state under DOT regulations.

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Older Drivers

A study was completed on the traffic safety problems and training needs of drivers age 55 and older. The study showed that although older drivers are overrepresented in total accidents on a miles-driven basis, they are underinvolved in accidents related to speed and drunk driving. They are more likely to be cited for lane use, signal, and turn violations.

Guidelines were developed for a retraining program and an information manual to explain how age affects driving.

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National Driver Register

The National Driver Register (NDR) was established by the Congress in July 1960, as a central index of state reports on drivers whose privileges have been denied, suspended, or revoked. Applications for driver licenses are checked routinely against the Register to determine the applicant's relevant driving history in other jurisdictions, and to prevent unsafe drivers from receiving a license from another state.

Prior to 1960, a driver whose license was withdrawn in one state merely had to apply in another state and could receive a valid permit. There was no practical way for a state to know whether a person was unfit to drive and denied driving privileges in another state.

The Register is a limited index to the complete driver record files maintained by the states and currently contains records on over 7.5 million individuals[2]. A probable identification obtained through the Register requires a follow-up contact with the state to obtain the applicant's complete record and to confirm that the applicant and the individual named in the record are the same.

The program is a voluntary, cooperative, state-federal driver data exchange system. NHTSA maintains the computerized file based on data provided by the states; it is accessible only to state and federal driver licensing administrators and to those whose license withdrawal has been reported.

In the early years, the U.S. mail was the only way for the NDR and the states to communicate with each other. This process was satisfactory because records automation was still in its infancy and rapid handling was not a critical need, since states issued temporary licenses prior to preparing and mailing the permanent license. Today, however, most states issue a permanent license while the applicant is present, and the NDR has been urged to provide immediate responses to state inquiries.

The present file consists of highly abstracted information that identifies the subject of the records and includes data on the reason for the state withdrawal or denial, the effective date, and the date eligible for restoration of privileges and/or date actually restored. The NDR has arranged to accept input from the states in any format that meets minimum requirements for file inquiries and file records. However, with dependence on mail transactions, the program has become outdated and is not as effective as it could be.

In 1978, Congress asked for a comprehensive study of the NDR. In its report to the Congress in 1980, NHTSA made several recommendations, the most important of which was that electronic service be implemented and that a "Problem Driver Pointer System" be developed. In such a system, the various states

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[2] The Privacy Act of 1974 requires that personal data files be maintained as accurately as practicable to protect the individual rights. A record disclosure accounting system is in operation to handle citizens' requests for data about themselves and to correct erroneous records.

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would maintain the substantive records of problem drivers, and the NDR would have only a "pointer file" that could indicate which state had a record identifying a problem driver.

Congress mandated the reforms suggested by enacting the National Driver Register Act of 1982, Title II, Public Law 97-364. This law requires the development of an electronic service that will permit states to exchange information on problem drivers in minutes rather than the one to two weeks that now frequently occurs. It further stipulates that the system be tested in a pilot program using four states. The pilot testing is scheduled to begin in 1985. An evaluation will be conducted during the pilot program and a report to Congress is required by October 1986.

To provide better service while the new system is being developed in May 1983, NHTSA began testing the feasibility of using commercial telephone lines as a means of exchanging data with the states. This system has been fast, effective, and economical, enabling a participating state to send file check requests (inquiries) one day and receive the results the next morning.

In November 1983, this "overnight processing" service was offered to the states and currently several are either using it or making changes necessary to use it.

Continued state participation in the NDR indicates that the program is considered useful. In 1983, more than 17.1 million state inquiries were submitted to the NDR. These inquiries resulted in 274,451 probable identifications of individuals attempting to obtain driving privileges while possibly under suspension or revocation in another state. In addition, over 3.4 million records were sent to the NDR by the states to update information in the NDR master file, which contained more than 7.8 million records.

Accident Data Improvement Plan

The Accident Data Improvement Plan (ADIP) is a joint NHTSA/FHWA effort to improve the quality of data contained in state accident record systems. The ADIP enables states to carry out more effective analysis and problem identification in developing their highway safety plans, and provides a better source of data for national evaluations of highway safety.

State highway safety plans followed the recommendations and targeted data improvements in the priority safety areas -- alcohol and occupant restraint safety equipment. As a result, 32 states (up from 22 in 1979) improved alcohol data element collection and 47 states (up from 41 in 1979) improved their occupant restraint safety equipment data element collections.

To assist the states in improving police accident reports, NHTSA will assemble current police report forms and will prepare a catalog of state police accident report forms.

National Highway Safety Advisory Committee

The National Highway Safety Advisory Committee was created by Congress in the Highway Safety Act of 1966 to advise the Secretary of Transportation on matters pertaining to highway safety programs. The Committee's 35 members are appointed by the President and include representatives of state and local governments, public and private groups concerned with highway safety, and research scientists[3].

The Committee holds public meetings and forums that offer an opportunity for all interested individuals to express their concerns and opinions on highway safety issues. In 1983, the Committee

[3] See Appendix B for list of Advisory Committee members.

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met three times and made the following recommendations to the Secretary of Transportation:

- The Department should undertake a review of the monitoring procedures used to certify compliance with the 55 mph national speed limit in order to ensure uniformity.

- Strong support for the Department's safety belt program. The Department should use all resources available to ensure that public service announcements are used by the media, especially during holiday periods.

- The Department should recognize the contributions made by private sector organizations for their support of highway safety programs.

National Center for Statistics and Analysis

NHTSA's National Center for Statistics and Analysis develops and operates data collection and analysis programs to support the agency's motor vehicle and highway safety activities. Representative and reliable accident data bases are essential to identifying and analyzing traffic safety problems and measuring the effectiveness of programs to deal with them.

The Center has developed and operates several accident data systems and conducts major studies of accident and exposure data. It also provides information on traffic safety to other parts of the federal government, state and local governments, citizens, industry, researchers and the international safety community.

The Center obtains information on motor vehicle accidents and exposure by direct field investigation, from police and other government reports and records, and through surveys. It collects data on vehicle occupants, pedestrians, and cyclists; their injuries; vehicles and damage sustained by them; types of collisions; roadway and environmental factors; vehicle use patterns; and exposure of the population to accident risks.

The data are used extensively in the agency's research, rulemaking, traffic safety, enforcement, and evaluation programs. The Center's analyses have documented changes in fatality patterns in accidents, the effectiveness of occupant protection systems, the safety performance of heavy trucks, safety problems with mopeds, and many other aspects of traffic safety.

The Center's major data collection systems are:

- The Fatal Accident Reporting System (FARS). FARS is a census of every fatal motor vehicle accident in the Unites States. Information for FARS comes from police accident reports, coroner's reports, and state records. Approximately 150 data elements are required for each FARS case. FARS has been operating since 1975, and contains data on more than 400,000 traffic fatalities.

- National Accident Sampling System (NASS). NASS was initiated in 1979 to provide more detailed, nationally, representative information on police-reported traffic accidents. Initially operating at 10 sites around the country, it has since been expanded to 50 sites that were chosen to be geographically and demographically representative of the country. The 12,000 accidents investigated by NASS each year are selected by a statistical sampling procedure so that the data collected can be expanded to estimate

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Table 4. Acquisition and Statistical Analysis

Research Accomplishments	Applications
Continued operation of the National Accident Sampling System (NASS).	To provide detailed data and nationally representative statistics on motor vehicle accidents. NASS investigates about 12,000 accidents each year at 50 sites across the country.
Operated the Fatal Accident Reporting System (FARS).	To provide NHTSA with a continuous census of nationwide fatal accident information to support safety improvements in vehicle crashworthiness, crash avoidance measures, highway design, and driver behavior. 1983 was the 9th year of FARS' operation.
Completed an analysis of passenger car steering column performance.	To compare the crash performance of different energy-absorbing steering columns and investigate whether design improvements may be possible.
Studied the 14 percent traffic fatality reduction that occurred from 1980 to 1982.	To examine patterns and seek causes for the dramatic decrease in fatalities. Some factors studied included alcohol involvement, economic influences, and population shifts.
Began a series of bimonthly "Fatality Trend" reports.	To illustrate how fatality patterns have changed in the eight years of FARS data and to gain insight into present and future changes.
Prepared monthly and semi-annual fatality reports.	To provide timely notice of current fatality trends.
Prepared annual FARS and NASS reports.	To make extensive FARS and NASS annual data available to the public.
Compared large- and small-car involvement in rear-end accidents.	To help estimate benefits for rulemaking on center, high-mounted stop lights.

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Table 4. Data Acquisition and Statistical Analysis — Continued

Research Accomplishments	Applications
Analyzed data from a series of 16 crash tests of identical vehicles.	To assess the variability in crash tests.
Developed a methodology for combining NASS and FARS data to yield state-level estimates.	To increase the potential usefulness of NASS data.
Prepared a discussion of NASS data from a user's point of view.	To assist NASS data users.
Analyzed the performance of Volkswagen Rabbit safety belts in fatal accidents.	To compare the performance of Volkswagen's active and passive safety belt systems.
Continued a study of truck brakes based on data from the Bureau of Motor Carrier Safety accident files.	To investigate truck brake performance.
Continued the investigation of special interest accidents (air bags, brakes, and school buses).	To support NHTSA safety activities.
Conducted analysis of FARS and NASS data to estimate alcohol involvement in traffic accidents.	To make national estimates of the incidence of alcohol involvement in fatal, injury producing, and property damage accidents.
Began implementation of an exposure survey in the Boston, Massachusetts, area.	To assess the relative accident involvement of small and large cars in different circumstances and to develop data collection procedures that can be used in a national exposure survey.

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national statistics on traffic accidents.

For each case in NASS, the investigator documents the scene of the accident, measures and classifies damage to the vehicles, obtains medical records and codes injuries, interviews survivors and witnesses, and obtains records on the drivers and vehicles involved.

- Special Interest Accident Investigations. The Center has five teams under contract to conduct detailed investigations of selected special interest accidents. These include fatal school bus accidents, accidents involving cars equipped with air bags or other special safety equipment, and accidents involving vehicles with alleged safety defects. The quick response capability of these teams enables the Center to begin investigating an accident anywhere in the country, usually within hours of its occurrence.

- Monthly Fatality Reports. Early reports from each state on the previous month's fatalities are combined in a monthly report. These early estimates provide prompt notification of national fatality trends.

- The Head and Neck Injury Study. This project is studying head and neck injuries, the most serious class of injury from traffic accidents. Starting with people admitted to the shock/trauma unit of the Washington (D.C.) Hospital Center, a special investigation team investigates and reconstructs the accident that caused the injury, identifies the interior vehicle component(s) struck by the occupant, and measures the forces involved in the accident. The team then tracks the patient through his or her medical treatment and rehabilitation.

Public Affairs/Consumer Outreach

Keeping the public informed about the safety aspects of motor vehicle travel is a particularly important NHTSA responsibility. As the federal authority on traffic safety issues, the agency cooperates with the national news media, automotive industry trade press, and other information sources to answer questions about agency activities and to provide the public with information that can make motor vehicle travel safer.

NHTSA encourages safe driving practices, alerting motorists to the risks of motor vehicle transportation, informing them about available safety precautions that can reduce the risks, and providing free publications and other consumer information on a variety of automotive topics. The agency also cooperates with the private sector to communicate traffic safety information to the public.

By sponsoring and participating in public exhibits, presentations, workshops, and conferences, NHTSA also is able to discuss informally highway safety issues leading to a better understanding on both sides and fostering workable solutions to traffic safety problems.

Consumer activities during 1983 included:

- Highway safety fairs at shopping malls in Hollywood, Florida; Portland, Oregon; and Denver, Colorado. These two-to-three-day events were sponsored by NHTSA and local organizations and included exhibits and free consumer information on drunk driving, safety belts, and child safety seats. There were also special attractions, such as a "drink-in" sponsored by the local police, demonstrations of the "safety belt convincer," and prize drawings for shoppers who signed a pledge to wear their safety belts.

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- Public hearings on the agency's automatic crash protection rulemaking. The hearings were held in Los Angeles, Kanasas City, and Washington, D.C. Special efforts were made to encourage public participation in the hearings by widely publicizing them.

- Safety belt promotions in New York; Reno, Nevada; San Francisco and Los Angeles, California; and Portland, Oregon were conducted in conjunction with the concert tour of singer/professional race car driver John Oates of the Hall and Oates singing group. Cash prizes and concert tickets were awarded to motorists who displayed the "buckle-up" bumper sticker on their cars and were observed wearing safety belts.

- Safeway Stores, Inc. printed a safety belt message on its milk cartons and included a drunk driving message on egg nog cartons to promote safe driving during the holidays.

- A tri-state pilot project, administered through the Supermarket Communications Network, promoted the use of NHTSA's Auto Safety Hotline. The agency stocked Hotline brochures in 723 grocery store outlets in the Connecticut, Michigan (including Toledo, Ohio), and Arizona regions. The project was expanded later in the year to an additional 482 outlets in the St. Louis, Missouri; Dallas/Fort Worth, Texas; and San Francisco, California, areas.

- The second annual Drunk and Drugged Driving Awareness Week. State and local government and safety groups combined with the private sector placed special emphasis on the danger of drunk and drugged driving. The president personally proclaimed the week at a White House ceremony on December 11. This national emphasis contributed toward making the 1983 holiday season the safest on record.

- A NHTSA-sponsored "Project Graduation conference with students, teachers and parents. Project Graduation is a national movement to discourage drunk driving by offering graduating high school seniors alternative, alcohol-free ways of celebrating. As a result of the conference, "chemical-free" celebrations were organized by cooperative community efforts in 36 states.

Auto Safety Hotline

NHTSA's toll-free Auto Safety Hotline provides recall information, receives motor vehicle safety defect complaints and furnishes consumers with information about fuel economy ratings, crash test results, tire safety and care, child safety seats, drunk driving, federal odometer laws, and motor vehicle safety standards.

The Hotline logged more than 219,000 calls in 1983. Sixty percent of the consumers who called the Hotline asked for recall information, eight percent reported safety problems they had experienced with their cars, and six percent sought other consumer information. Twenty-five percent of the calls were referred to other NHTSA offices and/or other federal, state, or local consumer agencies.

The Hotline's normal operating hours are 8:00 a.m. to 4:00 p.m. (Eastern time) Monday through Friday, but calls can be received day or night, seven days a week. During non-business hours, callers are assisted by an automatic telephone answering service.

The nationwide toll-free number is (800) 424-9393 (for the Washington D.C. metropolitan area, 426-0123). There is also a toll-free Teletrym (TTY) number

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for the hearing impaired, (800) 424-9153, (Washington, D.C., 755-8919). A Spanish-speaking operator is available during normal operating hours.

The Auto Safety Hotline provides consumers with a convenient means to obtain safety-related recall information. A printed copy containing a summary of the recall(s) can also be mailed, usually within 24 hours after request, or the information can be provided immediately over the telephone if it is not too extensive.

The Hotline also provides questionnaires to persons wishing to report vehicle, vehicle equipment or tire safety problems. When the completed questionnaire is received by the agency, the data is computerized and used to identify trends that may indicate potential safety-related defects. A copy of each questionnaire and a letter requesting assistance in resolving the consumer's problem is sent to the appropriate manufacturer.

Although NHTSA's authority is primarily in the area of safety, many consumers report problems related to warranties, service, sales, etc. — problems that must be resolved by manufacturers, state and local governments, or other federal agencies. As a public service, the Hotline operators have reference material on these agencies to direct consumers quickly to the proper organizations.

Management Improvements

In response to the president's direction that federal agencies reduce costs and improve efficiency, the NHTSA fiscal year 1983 Cost Avoidance, Reduction and Efficiency (CARE) Program achieved a savings of $5.2 million, double the FY 1982 accomplishment.

The agency's total employment decreased from 619 full-time permanent positions at the end of 1982 to 579 in 1983.

As required by the Federal Managers' Financial Integrity Act and Office of Management and Budget (OMB) Circular A-123, a system for evaluating and reporting on NHTSA's internal methods and procedures for safeguarding resources, assuring accuracy and reliability of information, adherence to laws, regulations, and policies was developed. A cursory review of 121 functional areas was completed to determine the level of vulnerability to fraud, waste, abuse, and mismanagement. More extensive reviews were conducted in 37 areas rated highly or moderately vulnerable.

An automated contract management system was established to improve operating efficiency by making contract information readily available to contract staff and to provide numerous contract management reports, i.e., the status of requisitions, contracts, or modifications.

The agency also upgraded its financial management activities under the "Reform '88" program announced by President Reagan in September 1982. For example, cash management procedures were revised to avoid the costs of late payments to vendors. NHTSA was commended for these improvements by the Secretary of the Treasury and the Director, OMB.

Civil Rights

Even with an overall staff reduction in 1983, minority employment at the agency increased from 23 percent to 24 percent. The percentage of female employment remained unchanged at 33 percent of the total workforce. Notably, the number of minorities and women who received employee awards and promotions exceeded their percentages of the total workforce.

NHTSA continued to provide resources for programs to bring about affirmative implementation of the equal employment opportunity program, such as

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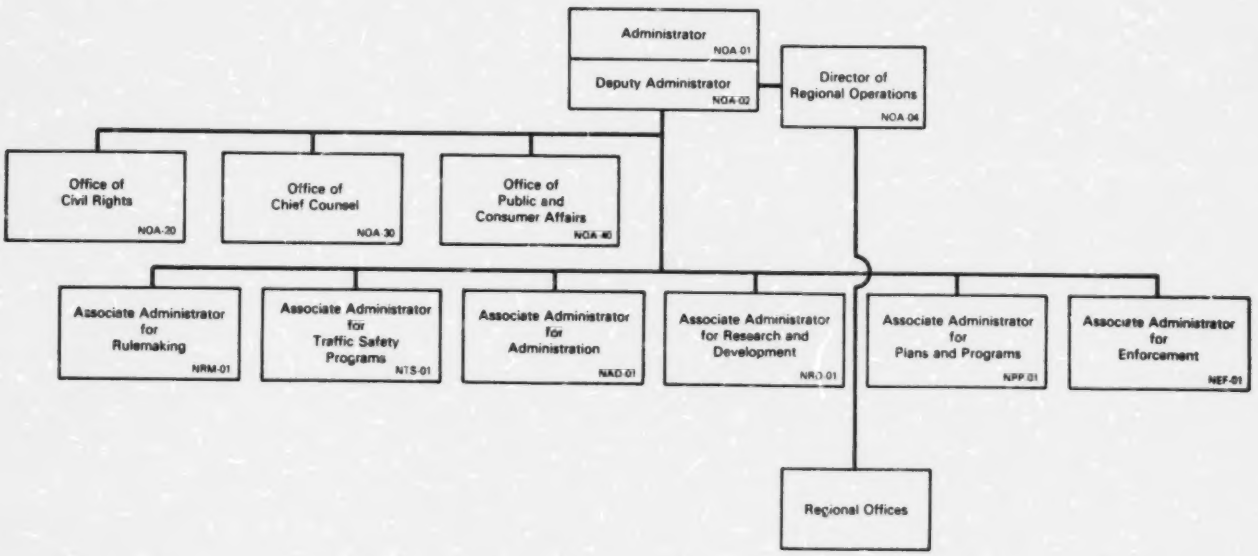
the Federal Women's, Hispanic Employment and other special emphasis programs and activities.

For example, in response to the President's mandate to upgrade the status of women in the federal workforce, the Federal Women's Program received added emphasis. In addition to the agency's participation in the Secretary of Transportation's initiatives to improve the status of women within the Department, NHTSA began a program that offers women increased training and educational opportunities to make them more competitive for supervisory, management, and executive-level opportunities.

Figure 3. National Highway Traffic Safety Administration



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PART II

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Trends and Issues

The number of fatalities resulting from motor vehicle traffic accidents in 1983 was 42,584 as compared with 43,945 in 1982. Based on preliminary data, the 1983 fatality rate per 100 million vehicle miles of travel dropped to 2.5, the lowest fatality rate recorded. This demonstrates a 7 percent improvement over the 2.8 fatality rate in 1982, and is 19 percent better than 1981 when the rate was 3.2. The estimated travel for 1983 is 16,501 hundred million vehicle miles, a 3.6 percent increase over 1982. The fatal accident rate for 1983 was 2.3 per 100 million vehicle miles of travel, a slight decrease over the previous year. The average number of fatalities per fatal accident was 1.12, which is virtually no change from the previous year.

No single safety effort can be identified as being the sole contributor to the decline. However, most safety experts believe the decline in fatalities is the cumulative safety effect of tougher and more effective drunk driver laws, safer highways, safer vehicles, increased awareness and use of occupant restraints, and the 55 m.p.h. speed limit. Traffic fatalities in the U.S. reached a high of 54,589 in 1972 and declined to 45,156 in 1974 when the oil embargo curbed driving habits nationwide. In the years 1978, 1979 and 1980, fatalities climbed to over 50,000.

If we are to continue to reduce the suffering and carnage on our nation's highways, all levels of government and the private sector must continue to focus on the safety challenges ahead that will foster highway safety improvements, produce safer vehicles, and improve driving practices. We must promote an awareness that serious problems still exist and that cost-effective countermeasures are available to reduce the number and severity of motor vehicle accidents.

A continuing major challenge facing the highway safety community today is to provide effective safety improvements with limited resources. The condition of the Nation's highway system has deteriorated during the past decade as bridges and pavements constructed in the post-World War II building boom are reaching the end of their design life. In order to enhance safety with limited resources, we need to identify the most cost-effective safety improvements that can be implemented under both new construction and as part of projects undertaken to resurface, rehabilitate, and restore existing roadways.

To add to the challenges, the number and types of vehicles and vehicle miles of travel are expected to increase, requiring our existing highway system to accommodate greater volumes of different types of vehicles than in the past. The size and weight of the automobile has decreased, and this decade will probably see the majority of Americans being transported by lighter automobiles. At the same time, the number, size, and weight of trucks continues to increase. We will need to continually identify a full range of safety strategies to address the change in vehicle mix and traffic volume.

FHWA Safety Program Responsibilities

The FHWA is concerned with the highway environment and is responsible for several highway safety programs. It administers:

- The highway safety construction programs, which are designed to increase safety by (1) identifying

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and correcting hazardous locations, sections, and elements, including roadside obstacles and unmarked or poorly marked roads; (2) eliminating hazards at rail-highway grade crossings; and (3) installing better signs and markings.

- A highway safety research program designed to improve engineering concepts and techniques for building and maintaining safer highways.

- The Highway Safety Standards, which provide for the identification and surveillance of accident locations; safe standards for highway design, construction, and maintenance; traffic engineering services; and engineering aspects of pedestrian safety.

- A program to monitor and regulate the safety performance of all motor carriers engaged in interstate or foreign commerce and the movement of hazardous materials, substances, and wastes on our Nation's highways.

Relationship of Highway Safety Standards and Research to Highway Safety Improvements

Highway safety involves an interrelated system of the vehicle, the human and the environment. If any part of the system fails, the potential for an accident exists. A coordinated program of education, engineering and enforcement activities is required to reduce this potential. Sections 402 and 403 of Title 23 U.S.C. assist this coordinated effort with the FHWA program focusing on the engineering expertise needed to provide a safe highway environment.

A key element for an effective highway safety program is a process for identifying, locating and analyzing hazardous highway locations and features, selecting cost-effective countermeasures based on their potential for accident or severity reduction and prioritizing and implementing projects that incorporate these countermeasures. The FHWA Section 402 Highway Safety Standards incorporate the "process" philosophy of roadway safety problem identification, project planning, implementation, and evaluation. Limited federal highway safety funds are made available under Section 402 for use by state and local highway agencies to carry out these activities.

Section 403 activities support and complement both Section 402 activities and highway safety construction improvements. Section 403 funds are dedicated to highway safety research and development, and to developing safety training materials. Consequently, they provide a significant portion of the assets needed to develop and disseminate state-of-the-art knowledge and technology in highway safety to those involved in providing a safer highway environment.

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State and Local Highway Safety Activities

The Highway Safety Act of 1966 requires each state to have an approved highway safety program designed to reduce accidents, deaths, injuries, and property damage. Each state administers the program through a state highway safety agency. This agency must identify needs, establish priorities, screen state and local proposals to include in the highway safety plan, and carry out the daily administration of the program. Section 402 funds are made available annually to assist in implementing the Governor's approved highway safety program.

Safety construction and operational improvements are identified as the most effective FHWA safety program in 23 CFR 1205, with consistent and measurably high accident reductions and benefit-cost ratios. The most effective safety construction and operational improvements are those selected and implemented through a systematic process for collecting and analyzing accident and roadway data, conducting engineering studies, establishing priorities and schedules for implementing improvements, and evaluating the results of the improvements. The highway-related safety standards incorporate the systematic process philosophy for problem identification, project planning, implementation and evaluation. As a result, the activities supporting this systematic process are the most effective highway-related efforts under the Section 402 program.

Of the 18 highway safety standards, three and a portion of a fourth (3+) are highway-related and are administered by the FHWA. These are Standards 9, 12, 13, and a portion of Standard 14, identified below.

- Standard 9, Identification and Surveillance of Accident Locations: Each state, in cooperation with county and other local governments, shall have a program for identifying accident locations and for maintaining surveillance of those locations having high accident rates or losses. The purpose is to identify specific locations or sections of streets and highways that have high or potentially high accident experience, as a basis for establishing priorities for improvement, selective enforcement, or other operational practices that will eliminate or reduce hazards at the locations.

- Standard 12, Highway Design, Construction, and Maintenance: Every state, in cooperation with county and local governments, shall have a program of highway design, construction, and maintenance to improve highway safety. The purpose is to assure that the existing streets and highways are maintained in a condition that promotes safety; that capital improvements, either to modernize existing roads or to provide new facilities, and meet approved safety standards; and that appropriate precautions are taken to protect passing motorists as well as highway workers from accident involvement at highway construction sites.

- Standard 13, Traffic Engineering Services: Each state, in cooperation with its political subdivisions, shall have a program for applying traffic engineering measures and techniques, including the use of traffic control devices, to reduce the number and severity of traffic accidents. The purpose

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is to assure the full and proper application of modern traffic engineering principles and uniform standards for traffic control to reduce the likelihood and severity of traffic accidents.

- Standard 14, Pedestrian Safety: Every state, in cooperation with its political subdivisions, shall develop and implement a program to ensure the safety of pedestrians of all ages. The purposes are to emphasize the need to recognize pedestrian safety as an integral, constant, and important element in community planning and all aspects of highway transportation, and to ensure a continuing program to improve such safety by each state and its political subdivisions.

In FY 1983, $10 million was authorized to assist states, localities, Indian tribes, and the territories of American Samoa, Guam, the Virgin Islands, and the Northern Mariannas, in carrying out activities related to the implementation of the FHWA highway-related standards. FY 1983 Highway Safety Plans included 296 safety tasks or activities. The total Section 402 funds used for these activities include $9.8 million in FY 1983 funds and carry-over funds from prior local governments. The safety tasks are classified by the activity involved and general purpose in Table 1.

The Highway Safety Act of 1973 included specific planning requirements closely paralleling those in Section 402. It requires each state highway agency to develop and implement a highway Safety Improvement Program (HSIP), which has the overall objective of reducing the number and severity of accidents and decreasing the potential for such accidents on all highways. The HSIP consists of components that together provide a comprehensive, systematic process for achieving more effective and efficient highway safety construction improvements. Funds available from the Section 402 program have substantially assisted the states in the development of systematic and comprehensive HSIP's.

Typical Section 402 funded activities can be categorized into three general areas of use. Activities in the first area involve the collection and evaluation of accident and traffic data. These activities are fundamental to a cost-effective safety construction program that implements only the construction improvements that are the most cost beneficial in reducing fatalities, injuries and property damage. Examples of implemented activities include:

- Develop inventory systems such as photologs to record roadway features, review areas for the need of safety features and supply data for future design purposes.

- Add time lapse photography and aerial photographs to photolog system.

- Purchase computer time and develop computer software programs to facilitate engineering studies and accident analyses, eliminate manpower-intensive calculations and enhance decision-making capabilities.

- Improve data quality, data storage capabilities, methods for retrieving and utilizing crash data, and develop analytical techniques such as automated collision diagramming for safety planning and programming.

- Perform engineering studies that analyze accident locations or develop accident diagrams to identify the types and causes of accidents and to develop alternative corrective actions.

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Table 1. FY 1983 Planned Obligations for FHWA Section 402 Highway Safety Program Activity and Purpose

Activity	Problem Identification ($1000)	Program Development ($1000)	Evaluation & Reporting ($1000)	Planning and Admin. ($1000)	Purchase & Installation ($1000)	Training ($1000)	Total ($1000)
Reference System	426.4	0	0	0	0	0	464.4
Accident Record System	803.4	0	0	0	0	0	803.4
Teams/Safety Comm.	170.5	0	0	0	0	0	170.5
Data Collection/ Inventory	1,853.0	0	0	0	0	0	1,853.0
Studies/Analysis	3,390.1	0	0	0	0	0	3,390.1
Photolog	273.2	0	0	0	0	0	273.2
Skid Testing	190.5	0	0	0	0	0	190.5
Bridge Inspection	90.5	0	0	0	0	0	90.5
Speed Monitor/ Analysis	70.8	0	0	0	0	0	70.8
Design Crit./Manual Prep.	0	87.6	0	0	0	0	87.6
Sfty. Const. Prog. Devel.	0	703.6	0	0	0	0	703.6
Traffic Engineering	0	863.2	0	0	0	0	863.2
Pedestrian/Bicycle Sfty.	0	137.0	0	0	0	0	137.0
Worksite Safety	0	70.2	0	0	0	0	70.2
Study/Analysis for Eval.	0	0	321.8	0	0	0	321.8
Reports	0	0	5.9	0	0	0	5.9
Planning & Administration	0	0	0	292.8	0	0	292.8
Public Information	0	0	0	344.0	0	0	344.0
Warning/Regulatory Signs	0	0	0	0	853.4	0	853.4
Marking/Signing Equip.	0	0	0	0	388.5	0	388.5
Attenuator Replace. Parts	0	0	0	0	147.6	0	147.6
Traffic Signals	0	0	0	0	69.1	0	69.1
Problem Ident. Training	0	0	0	0	0	58.9	58.9
Prog. Dev./Proj. Eval. Trng.	0	0	0	0	0	29.4	29.4
Worksite Sfty. Cont. Trng.	0	0	0	0	0	149.8	149.8
Sfty. Prog. Management Trng.	0	0	0	0	0	51.9	51.9
Sfty. Desc. Cnst. Maint. Trng.	0	0	0	0	0	1,178.7	1,178.7
TOTAL*	7,306.3	1,861.6	327.7	636.8	1,458.5	1,468.7	13,059.6
PERCENT	55.9	14.3	2.5	4.9	11.2	11.2	100.0

* Totals may not add up due to rounding.

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- Conduct special pedestrian and bicycle studies to determine accident programs and develop route plans.

The second area, technical capabilities, is an essential 402 activity that provides and maintains the technical proficiency of both state and local staffs in the current state of the art. Examples of implemented activities include:

- Provide technical services to cities, counties and villages to conduct engineering studies and provide answers to engineering questions.
- Provide a pedestrian coordinator to implement a comprehensive program.
- Train employees to accomplish an inventory for a program to ensure the use of uniform traffic control devices.
- Provide seminars on legal aspects and liability related to traffic safety that result in reduced potential for tort litigation and enhanced safety at many locations.
- Provide training programs to "certify" personnel such as flaggers to improve maintenance and construction zone safety.
- Develop highway safety design, construction and maintenance guides and procedural manuals.

The third area of 402 activities relates to the procurement of equipment. Equipment and materials purchased under the 402 program are the tools necessary to improve safety construction project effectiveness. Some activities that have been implemented include:

- Purchase high-technology equipment such as photolog equipment.
- Purchase pavement marking and inventory equipment that neighboring counties can use on a shared-cost basis.
- Calibrate skid measurement systems, which provide data on the friction of a pavement surface to identify slippery locations and improve payment design.
- Acquire equipment to make and/or modify traffic signs.

Figure 1 displays the distribution of the planned use of FHWA Section 402 funds in FY 1983. Approximately five percent of these funds were for planning and administration. The uses that directly support the HSIP process are improving the traffic records system, increasing knowledge of safety problems and solutions, and providing safety expertise and guidance. Of the total $13.1 million in FY 1983 and carry-over funds, $10.9 million or 84 percent was for activities to support the HSIP.

Also shown in Figure 1 is a category for minor safety improvements which are eligible for Section 402 funding as non-construction items. Minor safety improvements principally involve purchase and installation of warning and regulatory signs off the federal-aid system. Eleven percent of the planned obligations were for this purpose.

Use of Section 402 Funds for State or Local Benefit

Unlike most Federal-aid funds, Section 402 funds can be used on all public road systems, not just the Federal-aid highway system. Often these are the only funds available for safety planning purposes at the local level. Significantly, the off-system roads include low volume roads in low-density areas as well as high-volume roads in heavily populated areas. A large part of the accident problem occurs on local off-system roads.

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Figure 1. **Planned Distribution of FY83, FHWA Section 402 Funds**

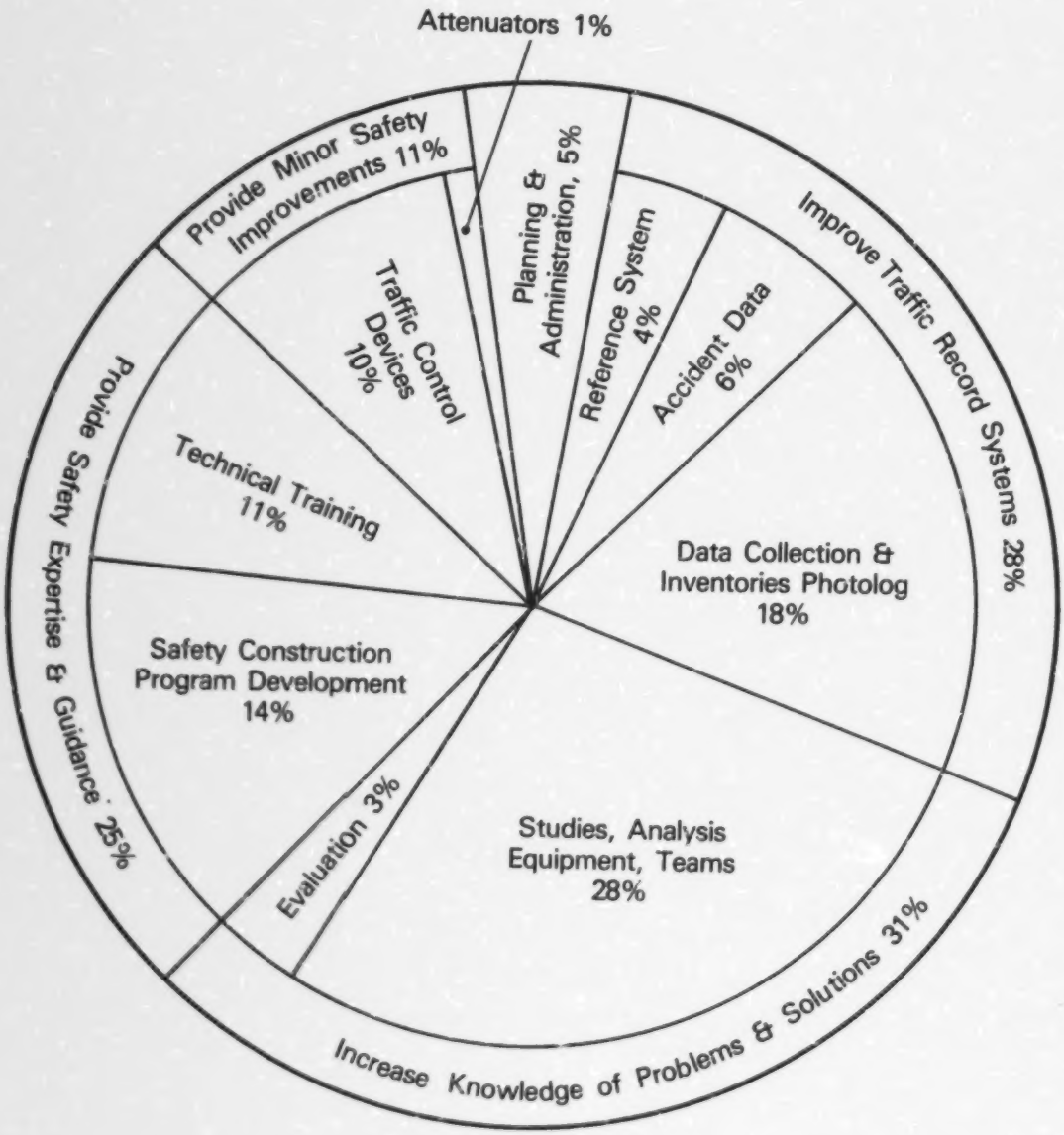
Attenuators 1%
Provide Minor Safety Improvements 11%
Planning & Administration, 5%
Reference System 4%
Accident Data 6%
Improve Traffic Record Systems 28%
Traffic Control Devices 10%
Technical Training 11%
Data Collection & Inventories Photolog 18%
Provide Safety Expertise & Guidance 25%
Safety Construction Program Development 14%
Evaluation 3%
Studies, Analysis Equipment, Teams 28%
Increase Knowledge of Problems & Solutions 31%

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Figure 2 displays the distribution of the state and local benefit to be derived from the planned activities for FY 1983. A total of $6.6 million or 50 percent of all planned obligations ($13.1 million) was for local agency benefit.

Planned obligations for Highway Safety Improvement Program (HSIP) activities totaled $10.9 million or 84 percent of all planned obligations. Over half of the $10.9 million was used to improve identification and selection of safety construction and operational improvements at the local level. Table 2 shows the major HSIP funding areas by activity and beneficiary.

FHWA Administration of the Highway Safety Program

The FHWA's safety management includes efforts to fully implement the highway-related safety standards even when these activities are funded from other sources.

Field office activities and accomplishments undertaken to improve the effectiveness of the states' implementation of the highway-related safety standards include:

- Improving safety related technical skills by promoting and providing technical courses. Some office staff members assisted in course development or participated as the course instructor.
- Providing technical assistance to state/local agencies in implementing new safety technology. The most common activities were safety reviews of standard drawings and the design standards of the state agencies, and promoting improvements to the states' HSIP processes.
- Assuring that accident history and potential are routinely considered during the development of projects for resurfacing, restoration and rehabilitation (3R).
- Promoting improvements to the states' traffic records system capabilities.
- Providing a mechanism for dissemination of safety findings among affected agencies. Activities in this area consisted of reviewing the dissemination process to assure that its performance was adequate, and increasing Division Office dissemination responsibilities.
- Continuing activities aimed at developing or refining the states' HSIP including general improvements as well as safety data system improvements.

Headquarters activities that actively supported Section 402 program implementation include:

- The National Highway Institute (NHI) provides training to FHWA, state and local government personnel with Section 402 funds, in addition to the training funded by the states.
  - "Access Management for Streets and Highways." The course objectives are to train individuals to (1) assess the safety and operational impacts of alternative access management techniques, (2) select the design, location, and control devices associated with access entrances, (3) review permit applications for appropriate features, and (4) recognize the various elements involved in developing and executing an effective access management program.
  - "Functional Requirements of Highway Safety Features." The course objectives are (1) to train highway personnel in the installation and maintenance of the various safety features, (2) to recognize hazardous situations and recommend proper remedial

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Figure 2. **Planned State and Local Percent Benefit of FHWA Section 402 Funds in FY 1983**

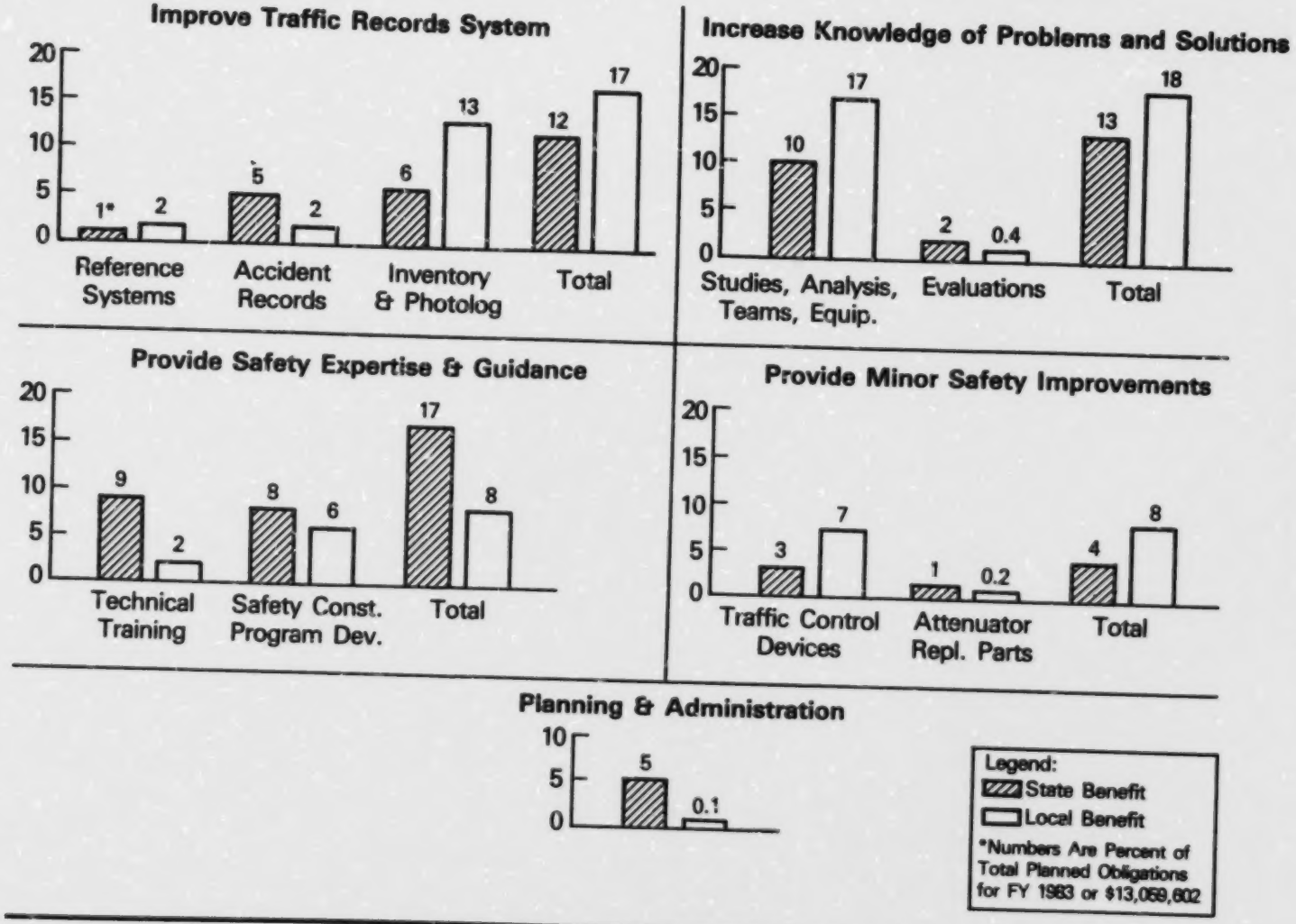

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Table 2. Highway Safety Improvement Program (HSIP) Activity and Benefit FY 1983 FHWA Section 402 Planned Obligations

Activity	Amount ($1000)	* Percent 402 Funds
Studies, Analysis, Teams		
State	1,356	10.4
Local	2,275	17.4
Data Collection, Inventory, Photolog		
State	711	5.5
Local	1,696	13.0
Technical Training		
State	1,211	9.3
Local	257	2.0
Safety Construction Program Development		
State	1,049	8.0
Local	812	6.2
Accident Records, Software		
State	609	4.7
Local	195	1.5
Reference System		
State	185	1.4
Local	280	2.1
Evaluations		
State	278	2.1
Local	50	0.4
Total - State	5,399	41.4
Total - Local	5,566	42.6
TOTAL	10,964	84.0

* "Percent 402 Funds is the percent of $13,059,602, the total 402 funds obligated in FY 1983.

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actions, and (3) to identify conditions in the field that may render an otherwise properly designed feature hazardous and take proper corrective action.

- "Highway Safety Engineering Studies." Each participant learns to (1) prepare a plan for the effective performance of a highway safety engineering investigation, (2) identify and select appropriate procedures and techniques necessary to perform a highway safety engineering investigation, (3) effectively employ procedures and techniques required in the safety engineering investigation of an identified hazardous location, (4) identify safety deficiencies and feasible countermeasures, and (5) select a safety project based on safety objectives.

- "Highway Safety Improvement Program." The course objectives are to train the participants to (1) implement a highway safety improvement program that complies with Federal-aid Highway Program Manual 8-2-3, (2) select the most appropriate procedures based on an agency's particular goals, objectives, resources and highway system, and (3) utilize current information concerning reporting requirements, funding sources, and practices of other highway agencies.

- "Highway Safety Evaluation." The course objectives are to train participants to (1) select appropriate measures to perform evaluations by using either accident data or alternative measures of hazard reduction, (2) perform an evaluation of implemented safety improvements for gauging their effectiveness and efficiency and to utilize the results for recommending improvements to other safety or operational problems, and (3) perform program effectiveness and administrative evaluations.

- "Traffic Control for Street and Highway Construction and Maintenance Operations." The course objectives are to train participants to (1) identify and apply workable concepts and techniques for planning, designing, installing, and maintaining signing and marking installations in construction and maintenance zones, (2) monitor their effectiveness, and (3) provide knowledge of legal, environmental, and administrative problems, and the legal and moral consequences of their actions or inactions.

Table 3 shows a summary of the safety training provided by the National Highway Institute (NHI).

- Highway safety assistance was extended to the academic community by offering them training materials, i.e., notebooks, instructor's guides and visual aids, developed for six FHWA-sponsored training courses. These courses, each addressing a different facet of highway safety, were distributed to college faculty for their use in establishing new courses or enhancing their existing course offerings.

- Activities were directed toward providing national safety perspectives in the areas of skid accident reduction, work zone traffic control, roadway maintenance, tree accidents, trucks transporting hazardous materials at rail-highway crossings, and at bridge pier protection systems.

- Program guidelines were developed and used for the systematic consideration of safety requirements in the selection and development of projects.

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- Periodic preparation of review reports titled "Highway Safety Overviews." This is a continuing series of reviews of recent safety research and development studies used by internal FHWA offices.

- Staff studies were conducted to evaluate highway safety improvement programs and countermeasures, perform an engineering analysis of fatal accident data from NHTSA's Fatal Accident Reporting System (FARS), review model integrated highway information systems, and study the effectiveness of existing guardrail in minimizing accident severity.

- Surveyed the FHWA field safety engineers to determine safety training needs.

- Performed reviews of 19 states to determine the extent of safety improvements included in resurfacing, rehabilitation, and restoration projects. As a result, provided additional guidance to the states and FHWA field offices.

- Examples of demonstration projects carried out under the federal-aid highway construction program in Fiscal Year 1983 that supported and implemented the purposes of the Section 402 Program are:

  - Urban System Traffic Improvements: This project involves a workshop on federal-aid eligibility and procedural requirements, traffic engineering technology, and correct project procedures.

  - Traffic Barrier Systems: Barriers and bridge railings perform a vital function in protecting motorists from roadside hazards. However, due to obsolete design or gradual deterioration, many existing barriers fail to meet current safety standards. This project demonstrates the advantages of a systematic approach to barrier upgrading, summarizes the results of recent barrier research, and offers technical assistance and partial funding to

Table 3. National Highway Institute (NHI) Safety Training in FY 1983

Course Subject	No. Classes	No. Students
1. Traffic Control for Street and Highway Construction and Maintenance Operations	1	37
2. Highway Safety Improvement Program	5	136
3. Highway Safety Engineering Studies	10	260
4. AASHTO Guide for Selecting, Locating, and Designing Traffic Barriers	2	61
5. Highway Safety Evaluation	4	100
6. Functional Requirements for Highway Safety Features	18	681
7. Accident Research Workshop	1	29
8. Design of Urban Streets	4	159
9. Traffic Control Devices Handbooks	1	25
10. Access Management for Streets and Highways	13	343
11. Traffic Performance Data Collection	7	184

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install one or more new barrier systems.

- Maintenance of Highway Safety Hardware: This workshop is designed for maintenance personnel. It demonstrates the maintenance requirements of guardrail, crash cushions, and breakaway sign and light supports, and provides checklists to enhance the understanding and ability to properly maintain these safety devices.

- Rail-Highway Crossing Corridor Improvements: There is a need to demonstrate the latest concepts to enhance grade crossing safety along a rail corridor and to document those features for distribution. On a pilot project in Illinois, the latest concepts in rail-highway crossing technologies were installed and evaluated. Results were documented in a slide/tape and made available to other agencies facing similar situations.

- Sprinkle Treatment of Asphalt Pavements: Sprinkle treatment is an effective technique that produces skid-resistant pavements at a reduced cost. Since this technique uses only minimal amounts of nonpolishing aggregates, it is an especially useful construction procedure in regions that have shortages of high-quality aggregates. Presentations are provided to requesting highway agencies, and financial assistance is available for the construction and evaluation of demonstration installations.

- Powder Coatings for Safety Appurtenances: Powder coatings can prevent the rusting of guardrails, sign posts, and other steel safety appurtenances. Use of this technology offers the potential for improved durability, visibility, and safety when compared to traditional coatings. Presentations are provided to requesting highway agencies, and financial assistance is available for the construction and evaluation of demonstration installations.

- Positive Guidance: Traffic safety at hazardous locations can be greatly enhanced through better signing and delineation. This project demonstrates using a combination of engineering psychology and engineering principles to achieve low-cost safety improvements on a site-specific basis.

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The Highway Safety Standards and Federal Agency Roads

Introduction

Some public highways are under federal agency control. Among federal agencies that administer continuing highway programs are the Forest Service, the National Park Service, the Bureau of Indian Affairs, and the Federal Aviation Administration. The Department of Defense and the Bureau of Land Management provide funds in their budget to establish and maintain roadway systems at military installations and resource development areas, respectively. The Corps of Engineers and the Bureau of Reclamation expend funds for highway and bridge construction associated with projects involving water resources management, recreational areas and navigable rivers.

As of December 31, 1982, there were about 262,000 miles of roads in federal parks, forests, and reservations open to public use that were not part of a state or local highway system. This represents about seven percent of the total public road mileage in the United States. Most of this mileage is located in the western states; however, only 14 states have no roads under federal agency control. The various roads under federal agency control are constructed for widely different uses and serve different traffic demands.

The Secretary of Transportation has the oversight and coordination responsibilities for highways on federal lands, which include forest highways, public lands highways, Indian reservation roads, park roads, and parkways. Appropriations for the construction and improvement of such highways, roads, and parkways are administered in conformity with regulations and agreements jointly approved by the Secretary of Transportation and the Secretary of the appropriate land management agency.

The Highway Safety Act of 1966 requires compliance with the Highway Safety Standards on all public roads, not just those under the jurisdiction of state or local highway agencies. The federal regulations require each department or agency to apply the standards, to the extent that they are relevant, to the activities of the department or agency. Of the 18 Highway Safety Standards, the highway-related 3+ standards administered by the FHWA are of concern to the federal agencies with roads under their control. Consequently, Memorandums of Agreement have been negotiated with most of the federal agencies with significant public road mileage and they have active programs to meet the applicable standards. In addition, the FHWA Direct Federal Program provides technical guidance to many of these agencies in the design and construction of their roads, and has worked to assure that objectives of the Highway Safety Standards are accomplished.

FHWA Direct Federal Program Accomplishments

The Direct Federal Program provides technical assistance to government agencies (federal, state, and local) in planning, location, safety and engineering studies, design, contract administration, construction, emergency repair, and maintenance of transportation facilities that serve federal lands. Assistance and coordination provided by Direct Federal covers the entire spectrum of highway development. Often the assistance provided utilizes new technology and represents practical technology transfer. The program also serves as the FHWA's "field laboratory" to develop, field test, demonstrate and promote the application of new engineering technology.

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Direct Federal also advances the FHWA's program objectives, which include safety through the design and construction process, and the development of design standards for park roads. Table 4 summarizes the Direct Federal project preliminary engineering work completed, and the construction contract administrative work performed during FY 1983.

The overall Direct Federal mission includes assisting in training and developing highway engineers and other professional personnel in other agencies through informal cooperation and participation. Several state and federal agencies have received training in construction, contract administration, materials testing, and the road and bridge inspection program.

The Direct Federal Program is responsive to overall FHWA program priorities. The following are some of the activities for FY 1983 that assisted in the implementation of the Highway Safety Standards on roads under federal agency control. The FHWA Direct Federal Program:

- o Continues to collect and evaluate accident and inventory data for establishing rehabilitation priorities.
- o Includes traffic control plans on projects as warranted and requires feedback information on features that are working well or that need revisions.
- o Continues to transfer safety technology. Specific examples are:
  - Evaluations of several previous experimental and demonstration items including polymer retroreflective pavement markings on the Natchez Trace Parkway installed in 1978 and a self-restoring guardrail installed in 1983 on the George Washington Memorial Parkway.

Table 4. Direct Federal Program
FY 1983 Engineering and Construction Activities

Agency	Number of Projects: Active Design	PS & E Completed	Contracts Awarded	Active Constr.
FHWA Funded				
Forest Highway	86	24	17	42
Park Roads & Parkways	60	22	12	17
Public Lands Highways	27	12	9	15
Indian Reservation	6	1	0	1
Emergency Relief for Federally Owned Roads (ERFOR)	10	9	8	19
Other Federal Agency Funded				
National Park Service	16	9	9	46
Bureau of Land Management	8	6	5	6
Bureau of Indian Affairs	5	4	2	3
Forest Service	17	12	12	30
Department of Defense	3	2	2	5
Federal Aviation Administration	7	3	3	6
Miscellaneous	6	6	3	5
TOTALS	251	110	82	195

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- Inclusion of waterborne and epoxy thermoplastic pavement marking material in several projects.

- Performed skid resistance measurements on a section of rubberized asphalt pavement to determine the effectiveness of this type of treatment within the State of Vermont.

Other Federal Agency Accomplishments

Bureau of Indian Affairs (BIA): The BIA serves as the Governor's Representative for the "Indian State". It is the only federal agency that receives a portion of FHWA Section 402 funds. Past accomplishments have focused on pedestrian safety, paint stripping, traffic control device inventories, special safety studies, and the purchase and installation of warning and regulatory signs.

In order to assist those Indian Tribes that have taken over responsibility for maintenance of reservation roads, $47,000 has been obligated to develop materials and conduct training on road maintenance for crews on Indian Reservations. The objectives of this effort are to teach Tribal employees how to (1) recognize potentially hazardous roadway situations and take appropriate remedial action, (2) install and maintain highway safety hardware, and (3) identify and correct conditions which may render safety features ineffective.

Department of Defense (DOD): Because of the importance of the safety program, the DOD stipulated that all military installations with roadways open to public travel must conform to the Highway Safety Program Standards. The Military Traffic Management Command (MTMC) is responsible for coordinating and assuring the implementation of Highway Safety Standards 12 and 13. To assist military installations with the implementation of these standards, MTMC has established several objectives. They include (1) developing and maintaining a reasonable level of traffic engineering expertise at the installation level, (2) providing responsive and direct technical assistance in the solution of installation problems related to highway safety, and (3) monitoring the status of implementation throughout DOD and focusing on those areas requiring emphasis.

In 1983, the MTMC made specific progress in meeting the established objectives by:

- Publishing MTMC Pamphlet 55-15, "Traffic Engineering for Better Gates." This pamphlet provides guidance on planning and designing installation gates that result in safe and efficient traffic movement while maintaining the desired level of security.

- Initiating the draft of a pamphlet that provides practical guidance on how to plan, organize, and operate a DOD Highway Safety Program.

- Developing baseline data for quantitative evaluation of the success of DOD highway safety improvements by entering the 1982 reports on implementation of the DOD highway safety program on a microcomputer.

- Providing resource personnel for a traffic engineering short course oriented toward DOD personnel at the Traffic Institute of Northwestern University.

- Completing a two-year program of making personal and telephone contact with personnel responsible for traffic engineering at some 300 DOD installations.

- Writing material on traffic engineering and highway safety to installation traffic engineering contacts.

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- Increasing the review of predesign documents and construction plans that resulted in the identification and correction of numerous potential safety hazards and design deficiencies prior to construction.

- Conducting over 25 on-site studies of installation traffic problems.

- Assisting the Air Force in developing a pamphlet on transportation planning.

Bureau of Land Management (BLM) and U.S. Forest Service (USFS): Both the BLM and the USFS have programs to meet the Highway Safety Standards. Both routinely require that their roads be marked and signed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and that their construction and maintenance activities have adequate traffic control plans and signing.

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Section 403 Accomplishments

Section 403 of Title 23, U.S.C. authorizes the Department to conduct research and development related to the highway safety program as well as other safety-related activities such as development of training for highway safety personnel. A total of $10,639,000 of Section 403 funds was obligated by FHWA during FY 1983.

Training

The training of federal, state and local engineers and technicians in the highway safety state of the art is one of the FHWA's principal means of technology transfer. Through training, states are assisted and encouraged to improve their Highway Safety Improvement Program process and implementation of the Highway Safety Standards. To assist in this training effort and to complement the Section 402 training funded by the states, Section 403 funds are used to develop safety training materials and to provide Highway Safety Fellowships and Scholarships.

During FY 1983, no new training was developed using Section 403 funds. However, several courses that were developed using Section 403 funds were presented by the National Highway Institute (NHI) using funds from other sources. A brief description of this effort may be found in Chapter 2, FHWA Section 402 Accomplishments.

Thirty-eight fellowships for graduate study in transportation and research, three fellowships for graduate study in highway safety, and 50 scholarships for undergraduate study in technical and paraprofessional topics were awarded to employees of state and local transportation agencies and the FHWA.

Highway Safety Research, Development, and Technology

Research, development and the transfer of new technology to users constitute an integral part of the process for improving safety on highways and streets. It helps to set highway safety priorities and to provide technical support for state and federal safety programs. The FHWA's research and development efforts are directed toward identifying and solving current operational problems, finding alternative solutions, and transferring this technology and information to highway agencies.

The FHWA solicits problem statements from the public and the highway community at large to identify critical subjects for long-range and immediate research efforts, and to establish priorities for refinement of existing research. The FHWA also cooperates with other elements in the Department of Transportation on problems of mutual concern. Research is contracted to state and local governments, commercial firms, universities, associations, institutes, and other federal agencies. Significant research findings are routinely provided to principal users and most reports are available from either the National Technical Information Service (NTIS) or the Government Printing Office (GPO). The FHWA safety-related research publications published during FY 1983 are listed in Appendix E. FHWA highway safety research studies funded in FY 1983 are listed in Appendix F. Appendix H contains a summary of the current status for the highway safety research activities.

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In FY 83, a total of about $8.6 million was obligated for safety research. Although many accident causes have been investigated and countermeasures developed, changes in vehicle type, size and weight, and limitations in funds for highway improvements have posed new areas for investigation that require a reassessment of established accident control measures. Safety research in 1983 focused on these concerns. Table 5 lists the categories of highway safety research studies with the amounts obligated for each category in FY 1983.

Table 6 shows examples of research program accomplishments and the findings or applications that affect safety program performance. These represent research completed in FY 1983.

Table 5. Funding for FHWA Highway Safety Research Studies in FY 1983

	Project Category and Title	Amount ($1000)	Percent of Total
1V	Roadside Safety Hardware for Nonfreeway Facilities	2,188.7	25.6
1T	Advance Vehicle Protection Systems	1,390.9	16.3
1P	Visual Guidance for Night Driving	934.8	10.9
1W	Measurement and Evaluation of Pavement Surface Characteristics	911.3	10.7
1A	Traffic Engineering Improvements for Safety	732.0	8.6
1L	Improving Traffic Operations During Adverse Environmental Conditions	412.8	4.8
1K	Accident Research and Countermeasures Effectiveness	381.6	4.5
1X	Highway Safety Program Effectiveness Evaluation	296.2	3.5
1U	Safety Aspects of Increased Size and Weight of Heavy Vehicles	278.1	3.3
1Z	Implementation of Previously Completed Safety Projects	245.3	2.9
1M	Operational Safety Improvements for Two-Lane Rural Highways	212.8	2.5
1N	Safety of Bicyclists, Moped Operators, and Pedestrians	207.2	2.4
1O	Railroad-Highway Grade Crossings	190.9	2.2
1S	Cost-Effective Geometric Design for Changing Vehicles and Limited Resources	129.1	1.5
1I	Traffic Lane Delineation System for Adequate Visibility and Durability	38.8	0.5
1Y	Traffic Management in Construction/Maintenance Zones	8.0	0.1
1E	Safety of Pedestrian and Abutting Property Occupants	4.4	0.1
	TOTAL	8,562.9	100.0

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Table 6. Results of Research Studies
Completed in FY 1983 - Examples

Accomplishment	Application/Finding
Studied the luminous requirements for traffic signs, their dimensions and imortance of visual complexity. Developed a method to predict sign detection; recognition was based on visual complexity.	Increasing sign brightness improved the sign recognition for complex visual scenes. When visual complexity is extremely high, performance is likely to be equally poor with all retroflective signs.
Studied the identification, quantification and structuring of two-lane rural highway safety problems and solutions. Identified safety problems on two-lane rural highways through the review and analyses of existing data and determined the cost-effectiveness of possible highway-related solutions to those problems. expenditures on two-lane rural	After reviewing the literature, existing research data bases were analyzed to provide state-of-the-art information on the current safety performance of two-lane highways and the potential benefits of highway accident countermeasures. Provided general guidance on investing highway safety highways.
Studied pedestrian risk exposure measures. The measures were applied to accident data to develop an "accident rate" for pedestrian accidents.	Findings noted were (1) pedestrians were running in the roadway, crossing at midblock or within 50 feet of an intersection; (2) crossing against the traffic signal, left turning vehicles, buses and motorcycle traffic; and (3) crossing on local and arterial streets that lack pedestrian pathways/sidewalks.
Studied ways to improve the visibility of railroad highway crossing signals. Some alternatives identified included sealed beam light units, redesigned bulb holding unit and field light measuring instrumentation aids.	Prototypes of the bulb holding unit and light measuring instrumentation devices were constructed. Studies to demonstrate the most promising alternatives are underway. Full command power will be tested on crossing signals.
A straignt collapsing, releasing terminal (CRT) system was developed that is significantly safer for minicompact cars. Pendulum and full-scale tests were conducted.	Results show that wood posts of this terminal, which are weakened by holes at the ground-line and 16 inches below grade, will break away satisfactorily even in weak or frozen soils.

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Table 6. Results of Research Studies
Completed in FY 1983 - Examples—Continued

Accomplishment	Application/Finding
A self-restoring bridge railing was developed for retrofitting concrete bridge rails that have high curbs and walkways.	Vehicles weighing 1,800, 20,000, and 40,000 lbs. have been successfully redirected. Test speeds included 60 m.p.h. at angles of 15 degrees.
Evaluated snowplowable pavement markers.	Of the three types of markers tested, the recessed marker was the most functional and cost effective.
Studied vehicle instability problems and site length limitations in regards to the development of an impact attenuator.	It is not feasible to develop an impact attenuator that can safely decelerate heavy vehicles such as tractor trailers.
A new truss median barrier having considerable potential for bridge applications was developed and tested.	Results show that 1,800-lb. and 40,000-lb. vehicles tested were successfully redirected at 60 m.p.h. Exit angles observed were very shallow.
Conducted pendulum tests at elevated impact heights on different transformer base mechanisms to show the effect on vehicle momentum changes under similar conditions. Compared elevated impacts occurring when luminaire supports are installed on roadside downslopes.	Vehicle momentum changes significantly increased as the impact height increased.
Studied the measurement of pavement-truck interactions under experimental conditions. Study assessment included the effect of truck size, weight, and configuration on vehicle handling and stability using both full-scale testing and simulation.	Results include a comprehensive assessment of a variety of truck variables related to size and weight regulations and their influence on truck dynamics.

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Table 6. Results of Research Studies
Completed in FY 1983 - Examples--Continued

Accomplishment	Application/Finding
Tested the application of a low-cost raised pavement marker from epoxy thermoplastic stripping for use in construction zones.	None of the formulations tested could hold their shape as installed. Heavy overriding of markers common in construction zones flattened them and destroyed their capacity to perform as raised pavement markers.
Guidelines were prepared to describe a procedure for setting realistic time periods to inspect and repair highway safety hardware.	The procedure is intended to maximize the highway safety benefit to be derived from a given amount of maintenance funds. The probability of a vehicle encroaching in areas where damaged appurtenances are waiting repair is used to develop the repair frequencies.

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Appendix A
Statistical Compilation

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Table A-1. Basic Data Pertaining to Motor Vehicle Traffic Accidents, United States, 1963-1983

Year	Resident Population (Thousands)	Licensed Drivers (Thousands)	Registered Motor Vehicles (Thousands)	Vehicle Miles Traveled (Billions)	Traffic Deaths	Mileage Death Rate (Deaths per Hundred-Million Vehicle Miles)
1963	188,483	93,573	83,483	805	41,723	5.18
1964	191,141	95,468	87,299	846	45,645	5.39
1965	193,526	98,502	91,740	888	47,089	5.30
1966	195,576	100,998	95,703	926	50,894	5.50
1967	197,457	103,172	98,859	964	50,724	5.26
1968	199,399	105,410	102,987	1,016	52,725	5.19
1969	201,385	108,306	107,412	1,062	53,543	5.04
1970	203,984	111,543	111,242	1,110	52,627	4.74
1971	206,827	114,426	116,330	1,179	52,542	4.46
1972	209,284	118,414	122,557	1,260	54,589	4.33
1973	211,357	121,546	130,025	1,313	54,052	4.12
1974	213,342	125,427	134,900	1,281	45,196	3.53
1975	215,465	129,791	137,913	1,328	44,525	3.35
1976	217,563	134,036	143,476	1,402	45,523	3.25
1977	219,760	138,121	147,262	1,467	47,878	3.26
1978	222,095	140,844	153,637	1,545	50,331	3.26
1979	224,567	143,284	159,621	1,529	51,093	3.34
1980	227,236	145,299	161,614	1,528	51,091	3.34
1981	229,518	147,075	164,118	1,556	49,301	3.17
1982	231,786	150,310	165,203	1,592	43,945	2.76
1983*	233,981	154,221	169,446	1,649	42,584	2.58

SOURCES: Vehicle Travel, Registered Vehicles and Licensed Drivers from Federal Highway Administration, Highway Statistics Division.
Population: U.S. Bureau of the Census (July 1 estimate).
Traffic Deaths. 1963-74, from National Center for Health Statistics, H.H.S. and State Accident Summaries (Adjusted to 30-day traffic deaths).
1975-83 from Fatal Accident Reporting System (FARS), NHTSA, (30-day traffic deaths).

*Provisional.

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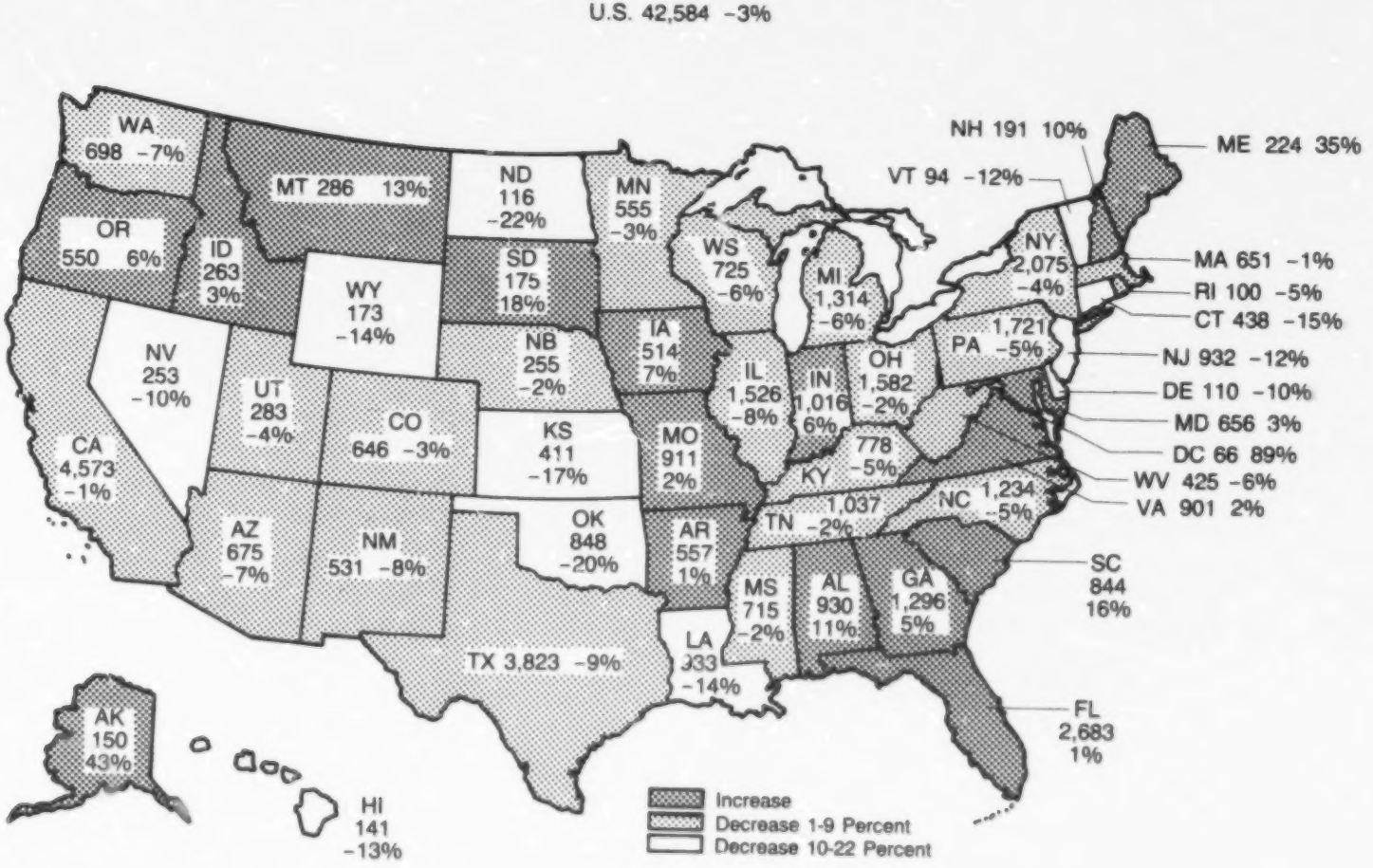
Figure A-1. **Motor Vehicle Traffic Fatalities by State, 1983, and Percent Change from 1982**



NOTE: (1) Fatalities are from the Fatal Accident Reporting System (FARS), NHTSA.
(2) In 1983, 33 of the States showed a decrease in traffic fatalities compared to 1982.

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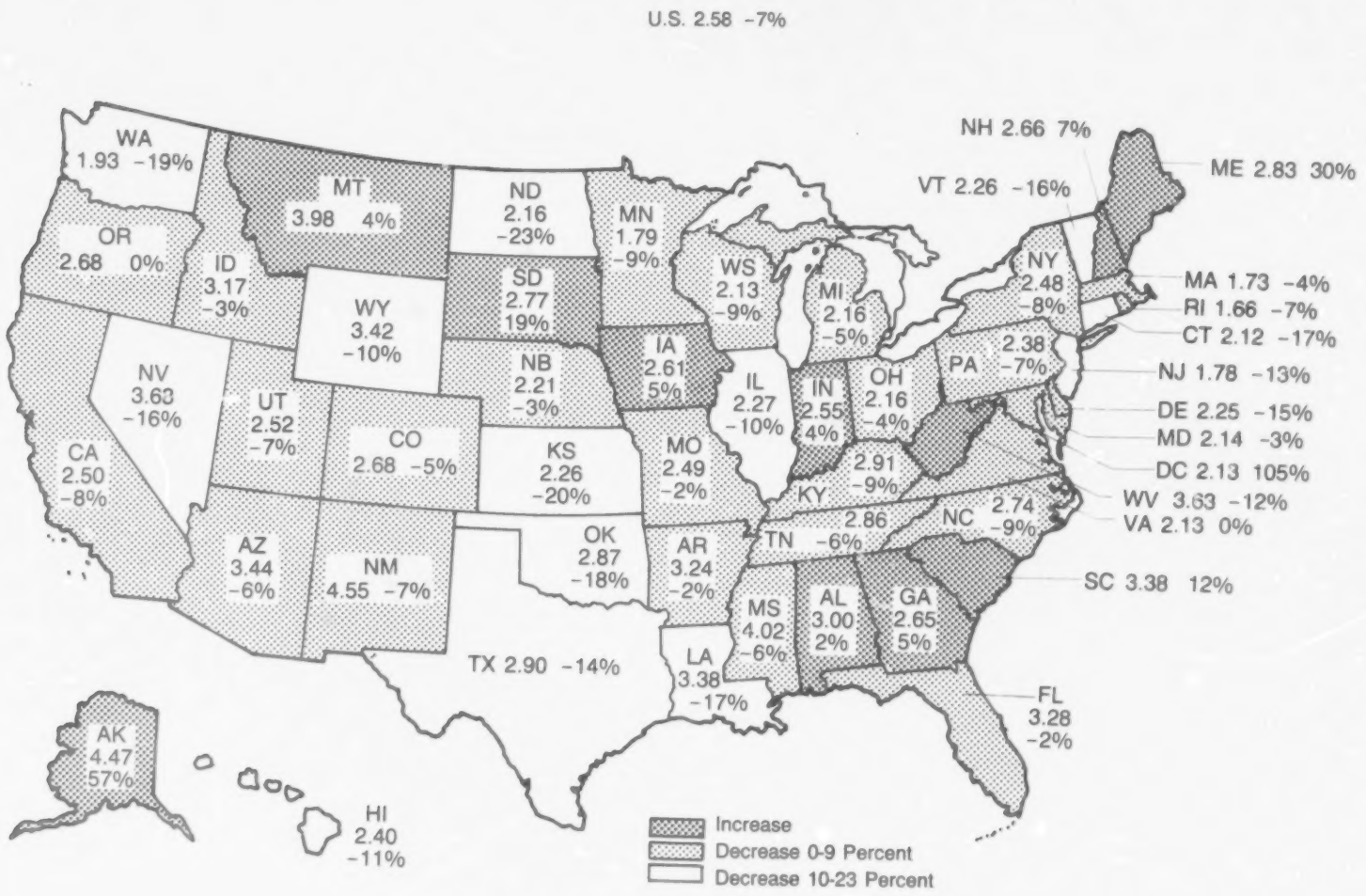
Figure A-2. **Motor Vehicle Traffic Death Rate, 1983, and Percent Change from 1982**



SOURCE: Fatalities — Fatal Accident Reporting System (FARS), NHTSA. Vehicle mileage — Based on preliminary estimates from automatic traffic recorder data supplied to Federal Highway Administration. Death Rate = Deaths per 100,000 vehicle miles.

NOTE: In 1983, 40 States showed a decrease in their vehicle mileage death rate.

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Table A-2. Fatality Rates for the United States and Selected Foreign Countries, 1981

Country	Passenger Car Occupant Fatalities		All Fatalities	
	Fatalities per 100 Million Vehicle-Kilometers	Fatalities per 10,000 Registered Cars	Fatalities per 100 Million Vehicle-Kilometers	Fatalities per 10,000 Population
Austria	3.6	3.8	5.7	2.5
Belgium	3.5	3.7	N/A	2.2
Germany	2.0	2.4	3.6	1.9
Great Britain	1.1	1.5	2.2	1.1
Netherlands	1.5	1.9	2.7	1.3
Norway	1.1	1.3	1.9	0.8
Spain	4.6	3.4	9.1	1.8
Sweden	1.0	1.5	N/A	0.9
Switzerland	1.4	2.0	N/A	1.8
United States	1.5	2.3	2.0	2.1

SOURCE: Statistics of Road Traffic Accidents in Europe, United Nations. Trends in Road Accidents, European Conference of Ministers of Transport.

Table A-3. Basic Statistics about Motor Vehicle Traffic Deaths in the United States, 1963, 1973-1983

Item	1963	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Deaths	41,723	54,052	45,196	44,525	45,523	47,878	50,331	51,093	51,091	49,301	43,945	42,584
Percent Change from Previous Year		-1.0	-16.4	-1.5	+2.2	+5.2	+5.1	1.5	0.0	-3.5	-10.9	-3.10
Motor Vehicle Travel (Billions of vehicle miles)	805	1,313	1,281	1,328	1,402	1,467	1,545	1,529	1,528	1,556	1,592	1,649
Registered Motor Vehicles (100,000)	835	1,300	1,349	1,379	1,435	1,473	1,536	1,596	1,616	1,641	1,653	1,694
Resident Population (100,000)	1,685	2,114	2,133	2,155	2,176	2,196	2,221	2,246	2,272	2,293	2,315	2,340
Licensed Drivers (100,000)	936	1,215	1,254	1,298	1,340	1,381	1,406	1,433	1,453	1,471	1,503	1,542
Death Rates												
Per Hundred Million Vehicle Miles	5.18	4.12	3.53	3.35	3.25	3.26	3.26	3.34	3.34	3.17	2.76	2.58
Percent Change from Previous Year		-4.8	-14.3	-5.1	-3.0	+.3	0.0	+2.5	0.0	-5.1	-12.9	-6.52
Per 100,000 Registered Vehicles	49.97	41.57	33.50	32.28	31.73	32.51	32.76	32.01	31.62	30.04	26.59	25.13
Per 100,000 Resident Population	22.13	25.57	21.18	20.66	20.92	21.79	22.66	22.75	22.49	21.50	18.98	18.20
Per 100,000 Licensed Drivers	44.58	44.47	36.03	34.31	33.96	34.66	35.74	35.66	35.16	33.52	29.24	27.61
Vehicle & Driver Relationships												
Ratio, Registered Motor Vehicles to Licensed Drivers	0.89	1.07	1.08	1.06	1.07	1.07	1.09	1.11	1.11	1.12	1.10	1.10
Ratio, Registered Motor Vehicles to Resident Population	0.44	0.62	0.63	0.64	0.66	0.67	0.69	0.71	0.71	0.72	0.71	0.72
Ratio, Licensed Drivers to Resident Population	0.50	0.58	0.59	0.60	0.62	0.63	0.63	0.64	0.64	0.64	0.65	0.65

P = Provisional.

SOURCES: Deaths: 1963-74, estimated by NHTSA from data supplied by the National Center for Health Statistics, H.H.S., and State Accident Summaries (Adjusted to 30-day deaths).
1975-83 from Fatal Accident Reporting System (FARS), NHTSA.

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Figure A-3. **Trends in Vehicle Mileage and Mileage Death Rate, 1963-1983**

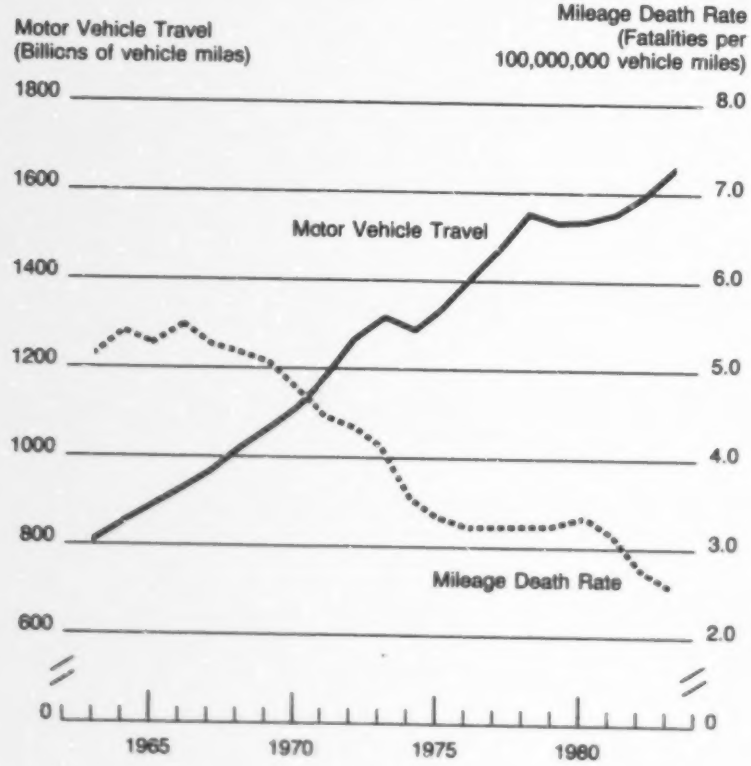
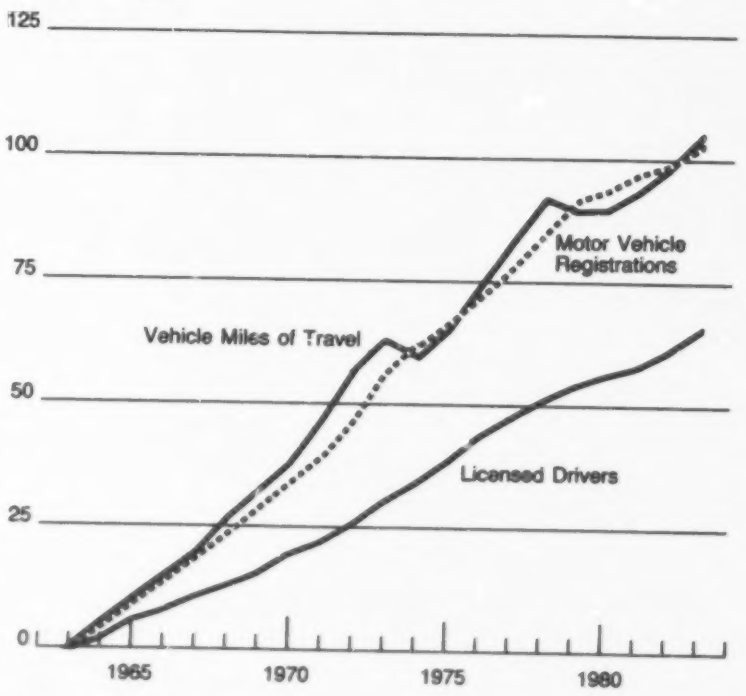


Figure A-4. **Trends in Motor Vehicle Registrations, Licensed Drivers and Vehicle Miles of Travel, 1963-1983**



SOURCE: Federal Highway Administration, Highway Statistics Division.

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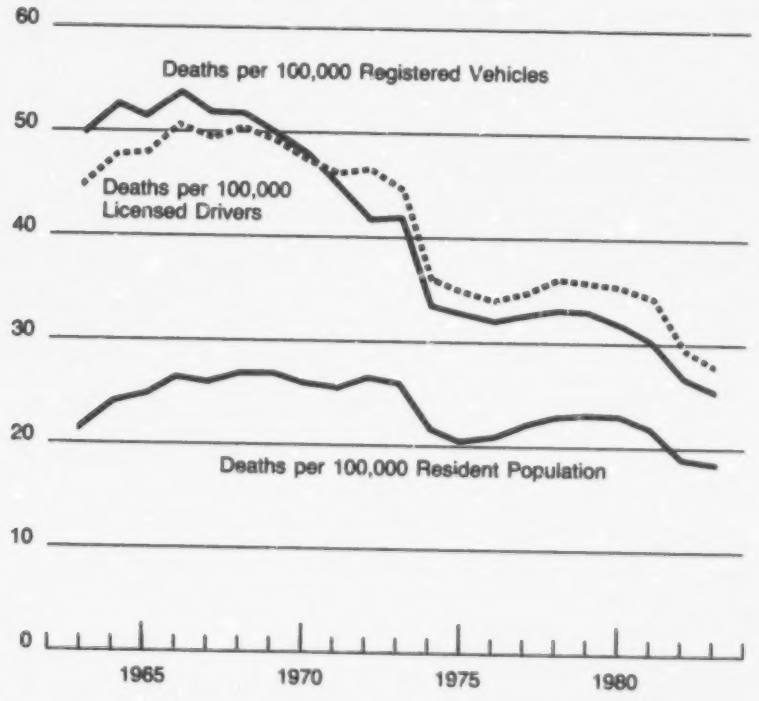
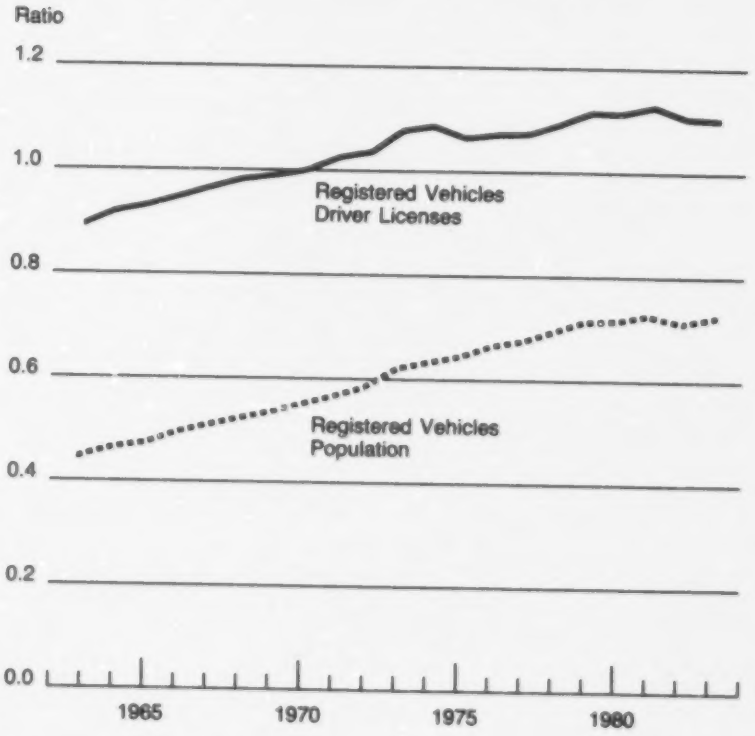
Figure A-5. **Trend in Motor Vehicle Death Rates, 1963-1983**



SOURCES: Deaths: 1962-74, National Center for Health Statistics and State Accident Summaries (adjusted to 30-day traffic deaths); 1975-83, The Fatal Accident Reporting System (FARS), NHTSA.
Vehicle travel, registered vehicles, and licensed drivers; Federal Highway Administration, Highway Statistics Division.
Population: Bureau of the Census.

Figure A-6. **Trend in Ratios of Registered Vehicles to Drivers and Population, 1963-1983**



SOURCES: Registered Vehicles and Licensed Drivers: FHWA, Highway Statistics Division.
Population: Bureau of the Census.

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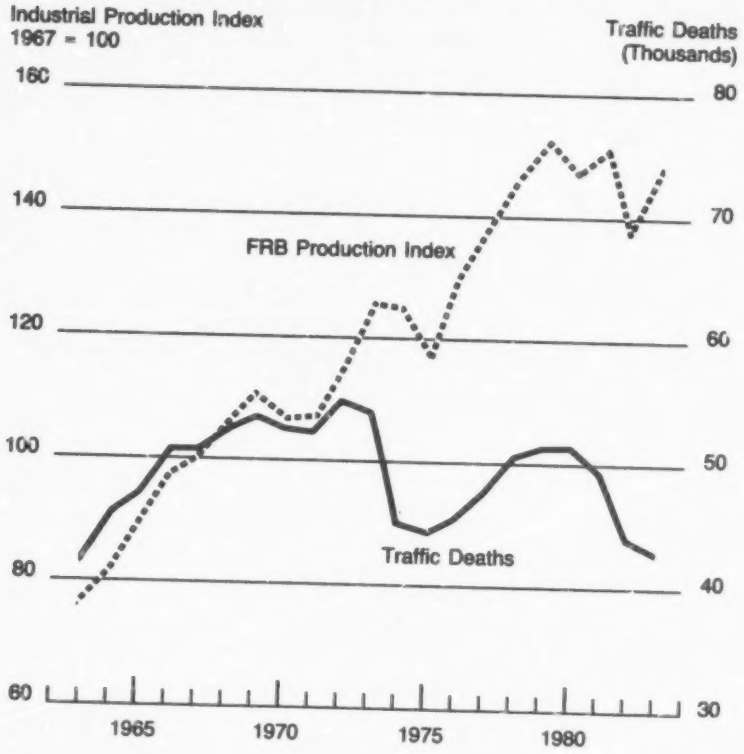
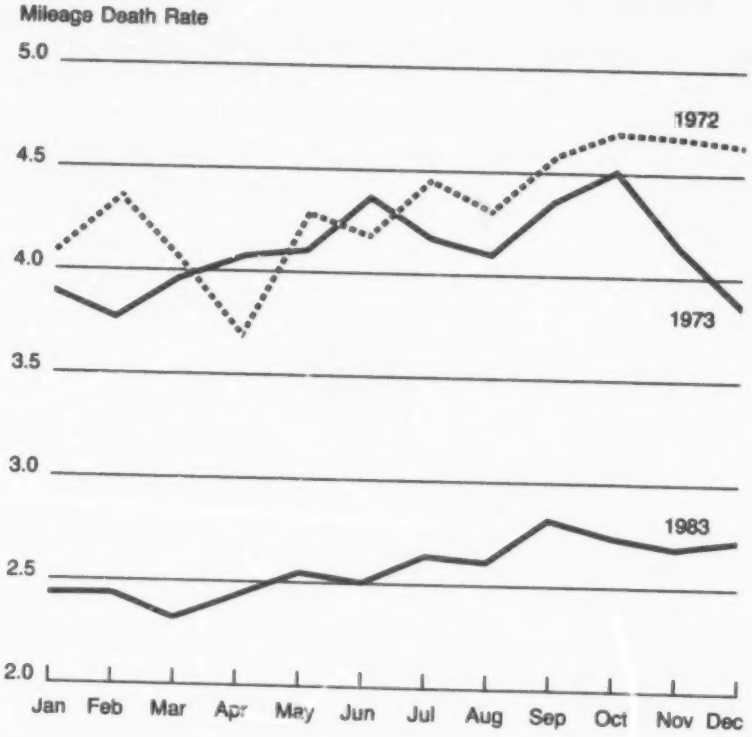
Figure A-7. Comparison of Traffic Deaths and Industrial Production Index, U.S., 1963-1983



SOURCES: Federal Reserve Board.
Deaths: 1963-74, National Center for Health Statistics.
1975-83, Fatal Accident Reporting System (FARS), NHTSA.

NOTE: From 1963 to 1966, the annual changes in highway fatalities corresponded closely with changes in the Federal Reserve Board Industrial Production Index. Clearly both trends had many common causative factors. Beginning in 1967, however, the rate of increase in highway deaths has fallen behind that of the industrial index, although similarities in the two trends are still apparent.

Figure A-8. Monthly Death Rates, for 1972, 1973, and 1983



SOURCE: Mileage data supplied by Federal Highway Administration.

NOTE: The graph for 1973, when compared to 1972, illustrates the general trend of annual reduction since the Highway Safety Act of 1966. The sharp drop that occurred at the end of 1973 and continued through 1980 also reflects the change in automobile use resulting from the energy crisis.

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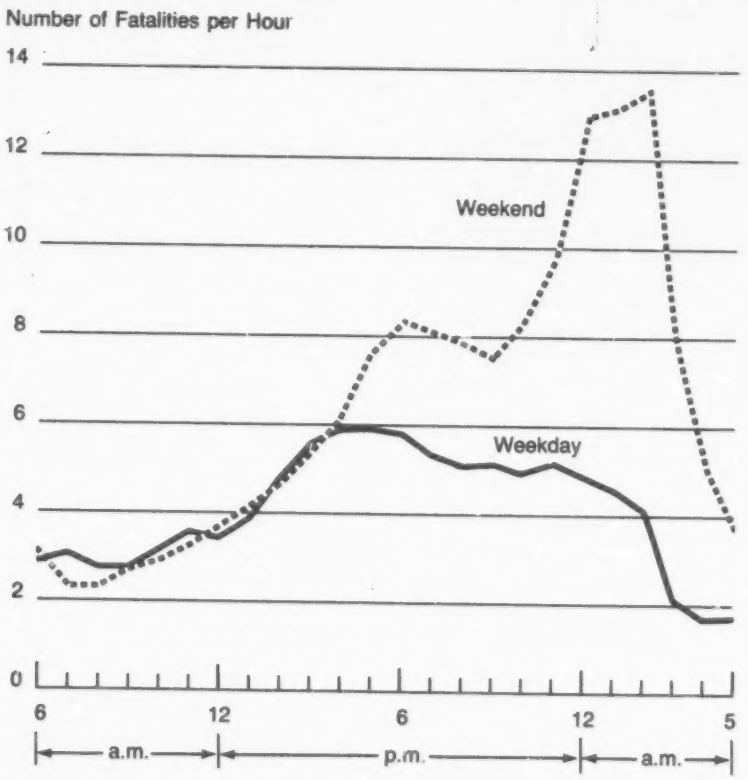
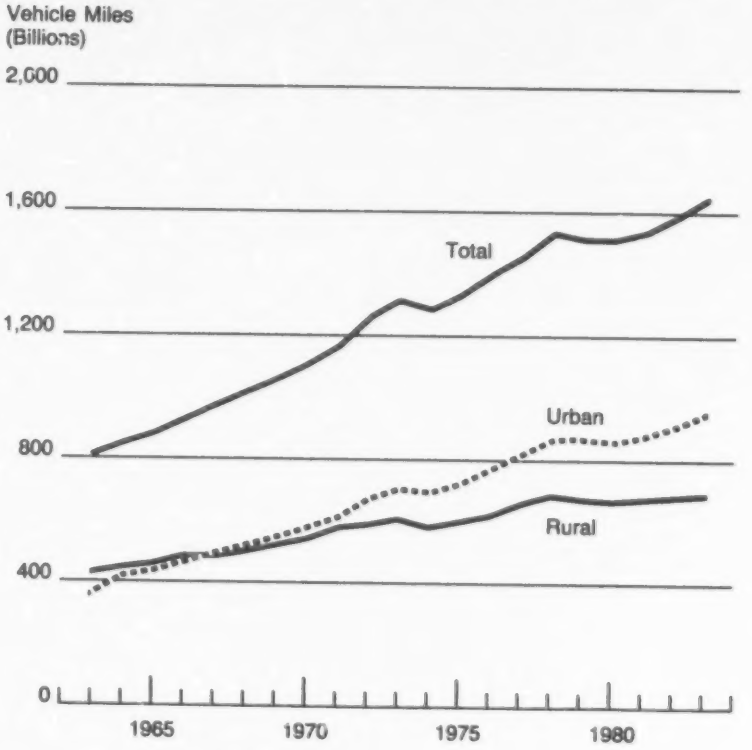
Figure A-9. **Weekend-Weekday Contrast in Fatality Rates, 1983**



SOURCE: Fatal Accident Reporting System (FARS), NHTSA.

NOTE: Weekend crashes (6 p.m. Friday — midnight Sunday) produce many more fatalities in the evening and early morning hours than do weekday crashes. This is primarily a result of increased recreational driving on weekend nights and associated increased use of alcohol.

Figure A-10. **Total Motor Vehicle Travel, 1963-1983**



SOURCE: Federal Highway Administration.

Table A-4. Growth in Population and Motor Vehicle Registration, 1972, 1982-83

	1972	1982	Ave. Annual Percent Increase 1972-1982	Percent Increase 1972-1982	1983	Percent Change 1982-1983
Total Registered Motor Vehicles	122,303,701	165,203,024	3.05	35.08	169,446,281	+2.57
Automobiles	96,859,746	123,746,128	2.48	27.76	126,727,870	+2.41
Trucks	21,239,163	35,143,838	5.16	65.47	36,547,781	+3.99
Schoolbuses	316,421	445,732	3.48	40.87	474,277	+6.40
Commercial Buses	90,533	113,468	2.28	25.33	111,238	-1.97
Motorcycles	3,797,838	5,753,858	4.24	51.50	5,585,112	-2.93
U.S. Resident Population, July 1	209,284,000	231,786,000	1.03	10.75	233,981,000	+0.95
Registered Motor Vehicles per Capita	0.59	0.72	1.87	20.34	0.72	+1.41

SOURCES: Federal Highway Administration.
U.S. Bureau of the Census.

Table A-5. Types of Motor Vehicles Involved in Fatal Accidents, 1982-1983

	Percent of All Vehicles Registered		Percent of All Vehicles in Fatal Accidents	
Type of Vehicle	1982	1983	1982	1983
Passenger Car	74.9	74.8	60.8	60.4
Motorcycle	3.5	3.3	8.0	7.8
Commercial Bus	0.1	0.1	0.3	0.4
Schoolbus	0.3	0.3	0.2	0.2
Single-Unit Truck	20.5	20.8	20.1	20.4
Pickup and Van	—	—	(18.0)	(18.0)
Other S.U. Truck	—	—	(2.1)	(2.4)
Multiunit Truck	0.7	0.7	6.4	6.8
Other	—	—	4.2	4.0

SOURCES: Accident data: NHTSA Fatal Accident Reporting System (FARS), NHTSA.
Registration data: Federal Highway Administration.

NOTE: Motorcycles and heavy trucks are over-represented in fatal accidents. The weight of trucks makes them especially lethal in highway accidents while motorcyles are extremely vulnerable to injury.

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Table A-6. Comparison of Number Miles Traveled Annually by Type of Vehicle, 1982-1983

Type of Vehicle	Total Travel*			Average Annual Travel Per Vehicle		
	1982	1983	% Change	1982	1983	% Change
Passenger Cars	1,179,623	1,221,846	+3.6	9,533	9,641	+1.1
Motorcycles	12,000	12,000	0.0	2,086	2,149	+3.0
Commercial Buses	3,577	3,648	+2.0	31,524	32,795	+4.0
Schoolbuses	3,062	3,098	+1.2	6,870	6,532	-4.9
Single-Unit Trucks	332,509	342,484	+3.0	9,805	9,705	-1.0
Multiunit Trucks	61,700	66,030	+7.0	50,075	52,424	+4.7
All Motor Vehicles	1,592,481	1,649,106	+3.6	9,640	9,732	+1.0

*Million of vehicle miles.

SOURCE: Federal Highway Administration.

Table A-7. Passenger Car Occupant Fatalities by Size of Car, 1975-1983 in Single Vehicle Fatal Accidents (Unknowns Have Been Distributed in Table*)

Size	1975	1976	1977	1978	1979	1980	1981	1982	1983	Percent Change 1975-83	Percent Change 1982-83
Total	12,431	12,676	12,474	12,864	12,929	13,480	12,539	10,879	10,603	-14.7	-2.5
Percent	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)		
Small Subcompact	1,741	1,800	2,006	2,034	2,297	2,503	2,573	2,325	2,341	+34.5	+0.7
	(14)	(14)	(16)	(16)	(18)	(19)	(20)	(21)	(22)		
Subcompact	761	791	877	1,011	1,183	1,408	1,501	1,469	1,485	+95.1	+1.1
	(6)	(6)	(7)	(8)	(9)	(10)	(12)	(13)	(14)		
Small Compact	445	471	404	481	509	562	624	625	638	+43.4	+2.1
	(4)	(4)	(3)	(4)	(4)	(4)	(5)	(6)	(6)		
Compact	2,618	2,637	2,496	2,631	2,854	3,097	2,708	2,366	2,256	-13.8	-4.6
	(21)	(21)	(20)	(20)	(22)	(23)	(22)	(22)	(21)		
Intermediate	4,483	4,451	4,349	4,333	3,963	3,755	3,422	2,792	2,655	-40.8	-4.9
	(36)	(35)	(35)	(34)	(31)	(28)	(27)	(26)	(25)		
Full-Size	2,383	2,526	2,342	2,374	2,123	2,155	1,711	1,302	1,228	-48.5	-5.7
	(19)	(20)	(19)	(18)	(16)	(16)	(14)	(12)	(12)		

SOURCE: Fatal Accident Reporting System (FARS), NHTSA.

NOTE: The classification of passenger cars reflects the following groupings by "wheelbase" dimensions:
- Small Subcompact — Less than or equal to 96 inches
- Subcompact — Greater than 96-101 inches inclusive
- Small Compact — Greater than 101-106 inches inclusive
- Compact — Greater than 106-111 inches inclusive
- Intermediate — Greater than 111-120 inches inclusive
- Full-Size — Greater than 120 inches

*The following passenger car occupant fatalities, where the wheelbase was unknown, have been included in the table and distributed in proportion to the fatalities where the size of the car was known.

Unknown Size	4,411	4,002	3,614	3,290	2,500	2,002	1,722	1,335	1,498		

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Table A-8. Passenger Car Occupant Fatalities by Size of Car, 1975-1983 in Multiple Vehicle Fatal Accidents (Unknowns Have Been Distributed in Table*)

Size	1975	1976	1977	1978	1979	1980	1981	1982	1983	Percent Change 1975-83	Percent Change 1982-83
Total	13,498	13,490	14,308	15,289	14,879	13,969	14,106	12,451	12,373	-8.3	-0.6
Percent	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)		
Small Subcompact	2,432	2,650	2,949	3,194	3,364	3,337	3,718	3,278	3,336	+37.2	+1.8
	(18)	(20)	(21)	(21)	(23)	(24)	(26)	(26)	(27)		
Subcompact	808	957	1,142	1,251	1,389	1,511	1,666	1,574	1,640	+103.0	+4.2
	(6)	(7)	(8)	(8)	(9)	(11)	(12)	(13)	(13)		
Small Compact	549	573	574	633	712	746	964	1,030	1,087	+98.0	+5.5
	(4)	(4)	(4)	(4)	(5)	(5)	(7)	(8)	(9)		
Compact	2,337	2,432	2,572	2,919	2,970	2,933	2,924	2,662	2,506	+7.2	-5.9
	(17)	(18)	(18)	(19)	(20)	(21)	(21)	(22)	(20)		
Intermediate	4,437	4,056	4,173	4,422	4,037	3,571	3,134	2,665	2,607	-41.2	-2.2
	(33)	(30)	(29)	(29)	(27)	(25)	(22)	(21)	(21)		
Full-Size	2,935	2,822	2,898	2,870	2,407	1,871	1,700	1,242	1,197	-59.2	-3.6
	(22)	(21)	(20)	(19)	(16)	(14)	(12)	(10)	(10)		

SOURCE: Fatal Accident Reporting System (FARS), NHTSA.

NOTE: The classification of passenger cars reflects the following groupings by "wheelbase" dimensions:
- Small Subcompact — Less than or equal to 96 inches
- Subcompact — Greater than 96-101 inches inclusive
- Small Compact — Greater than 101-106 inches inclusive
- Compact — Greater than 106-111 inches inclusive
- Intermediate — Greater than 111-120 inches inclusive
- Full-Size — Greater than 120 inches

*The following passenger car occupant fatalities, where the wheelbase was unknown, have been included in the table and distributed in proportion to the fatalities where the size of the car was known.

Unknown Size	4,750	4,072	3,904	3,598	2,690	1,941	1,853	1,469	1,605		

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Table A-9. Comparison of Driver Fatalities in Two-Vehicle Accidents Among Vehicles of Different Sizes, 1980-1983 Combined

	Size of the Larger Vehicle in the Crash					
	Subcompact	Compact	Intermediate	Full-Size	Light Truck	Heavy Truck
Size of Smaller Vehicle in the Crash						
Minicompact	2.2	4.5	9.6	13.9	9.0	36.4
Subcompact		2.07	4.4	6.6	5.7	37.9
Compact			2.0	3.9	3.2	27.8
Intermediate				1.6	1.6	24.6
Full-Size					1.2	25.5
Light Truck						18.6

SOURCE: Fatal Accident Reporting System (FARS), NHTSA.

NOTE: This chart illustrates the relative probabilities of fatal injuries to drivers when vehicles of different sizes are involved in accidents. For example, in a collision of a minicompact and a full-size car, the driver of the smaller car is 13.9 times more likely to be killed than the driver of the full-size auto.

Table A-10. Fatality Rates and Vehicle Involvement Rates by Vehicle Type (In Fatal Accidents), 1983

Vehicle Type	Occupant Fatality Rate per 100 Million Vehicle Miles	Occupant Fatality Rate per 10,000 Registered Vehicles	Vehicle Involvement Rate (In Fatal Accidents) per 100 Million Vehicle Miles	Vehicle Involvement Rate (In Fatal Accidents) per 10,000 Registered Vehicles
Passenger Car	1.88	1.81	2.72	2.63
Motorcycle	35.53	7.63	35.84	7.70
Bus	0.79	0.91	4.54	5.23
Truck	1.57	1.75	3.66	4.09
Single Unit Truck	1.66	1.61	3.28	3.18
Combination Truck	1.11	5.92	5.65	30.05
All Vehicle Types (Less Motorcycles)	1.87	1.87	3.10	3.10

SOURCES: Fatalities: Fatal Accident Reporting System (FARS), NHTSA (30-day deaths).
Vehicle Travel and Registered Vehicles: Federal Highway Administration.

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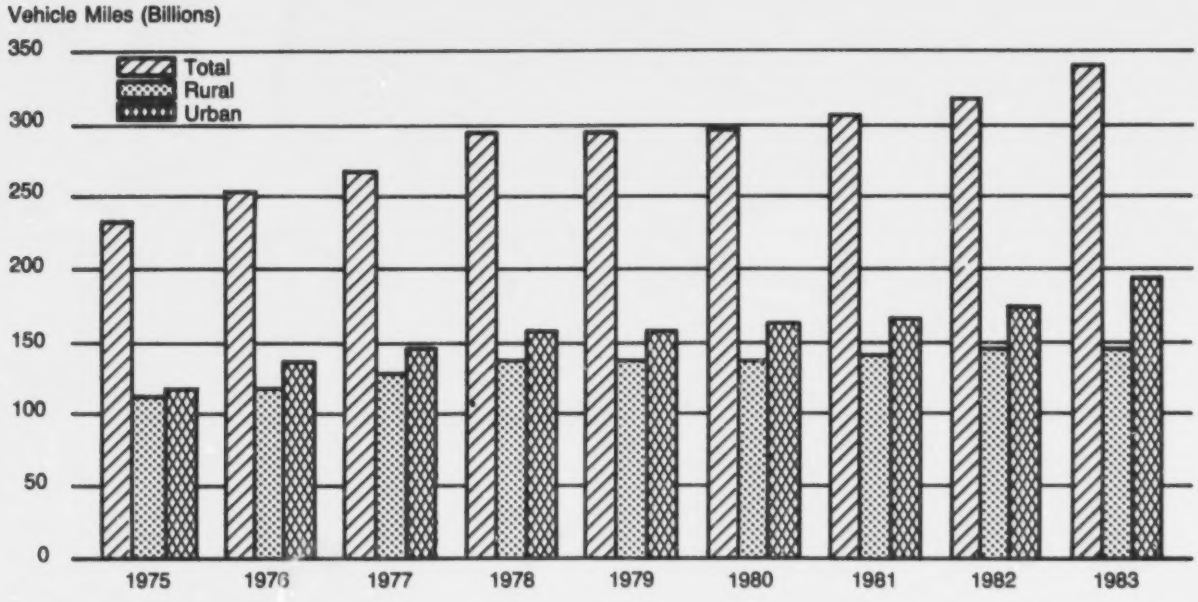
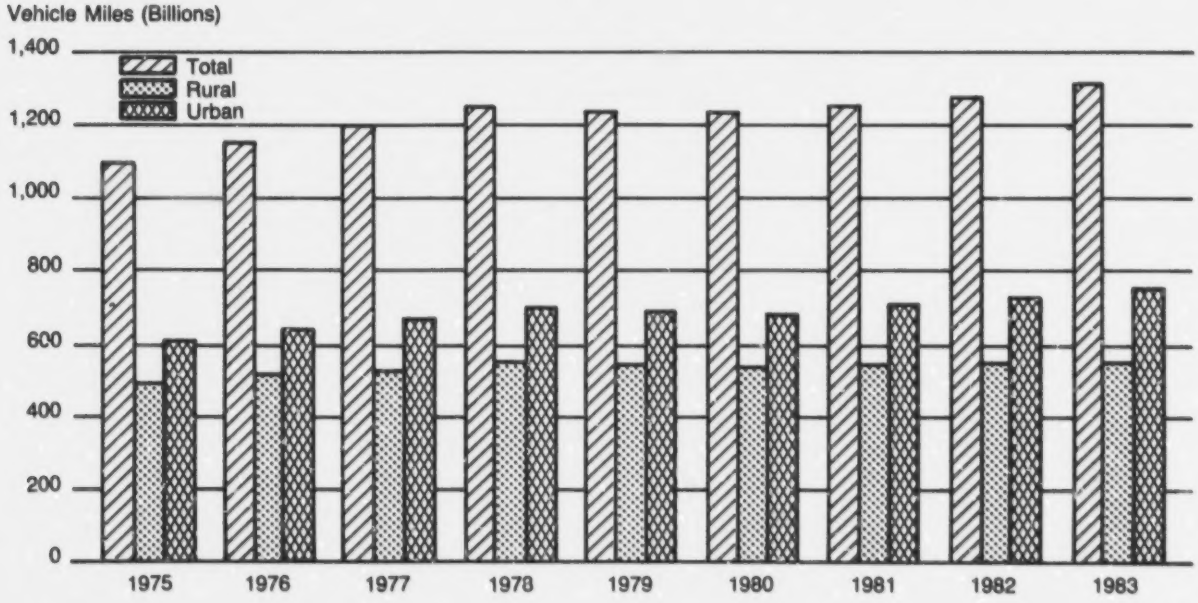
Figure A-11. **Motor Vehicle Travel on the Interstate Highway System, 1975-1983**



SOURCE: Federal Highway Administration.
NOTE: Interstate Highway System is synonymous with the Federal Highway Administration categories interstate (Arterial) and Interstate (Final).

Figure A-12. **Motor Vehicle Travel on Non-Interstate Highway Systems, 1975-1983**



SOURCE: Federal Highway Administration.

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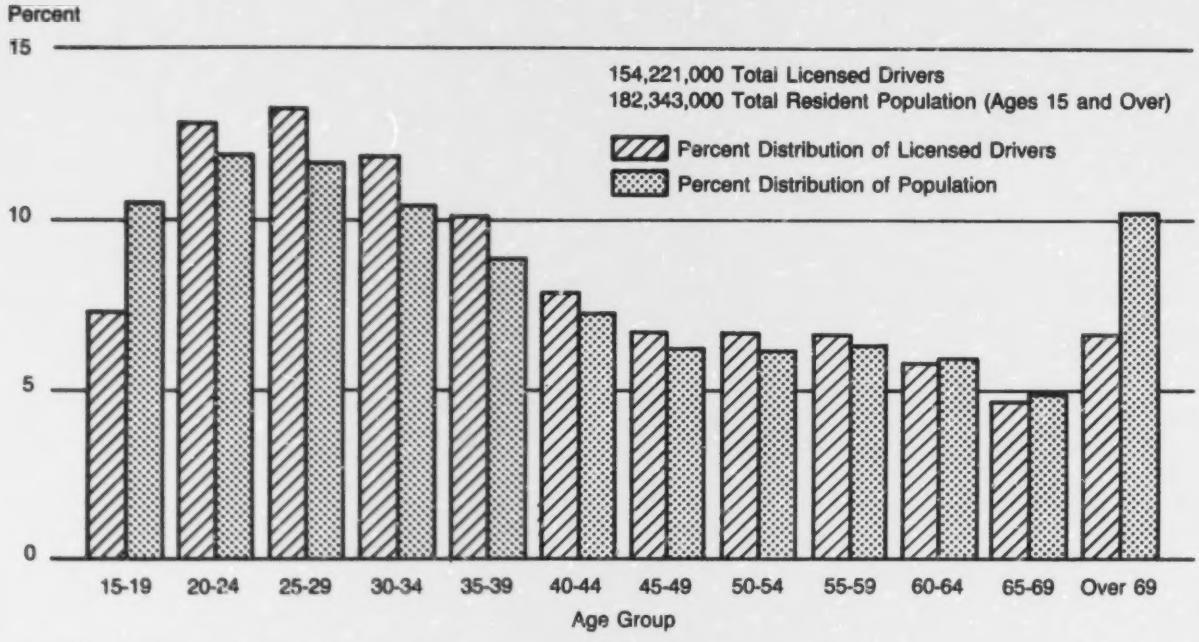
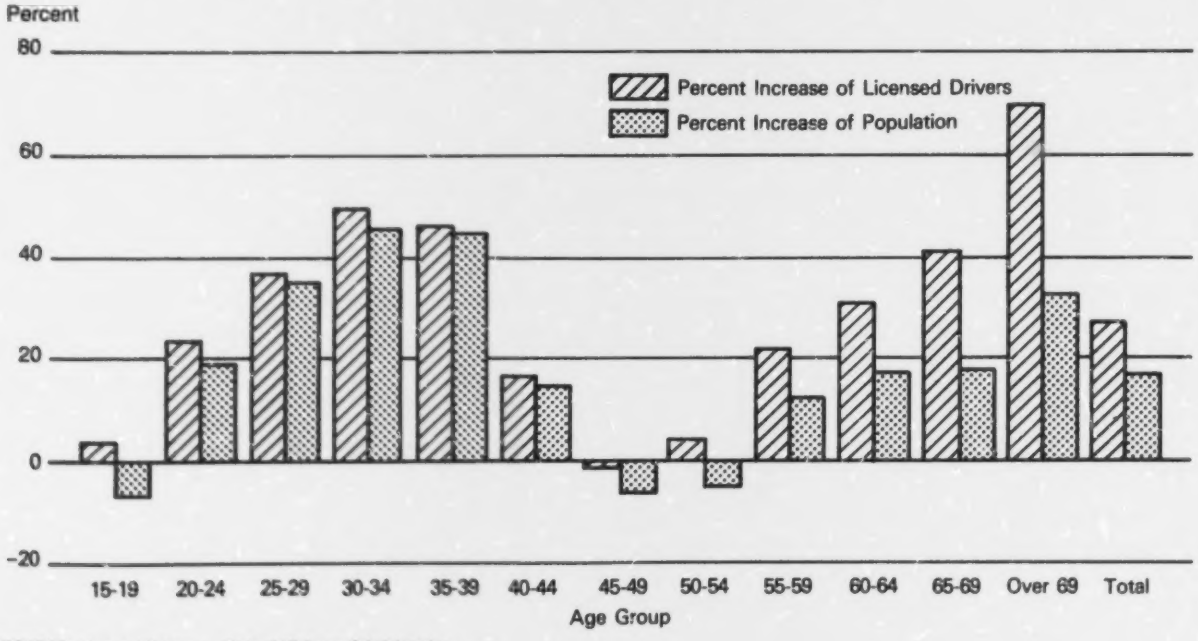
Figure A-13. Licensed Drivers and Population by Age Group, 1983



SOURCE: Licensed Drivers — Federal Highway Administration.
Population: Bureau of the Census.

Figure A-14. Percent Increase in Licensed Drivers and Population by Age Group, 1973-1983



SOURCE: Licensed Drivers — Federal Highway Administration.
Population: Bureau of the Census.

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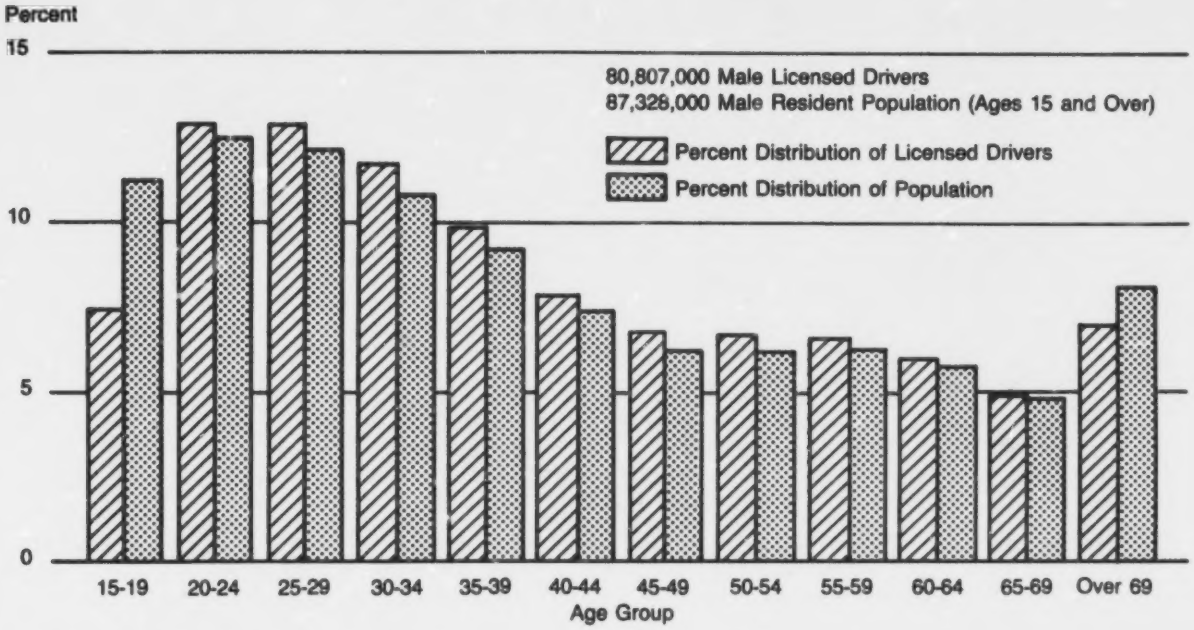
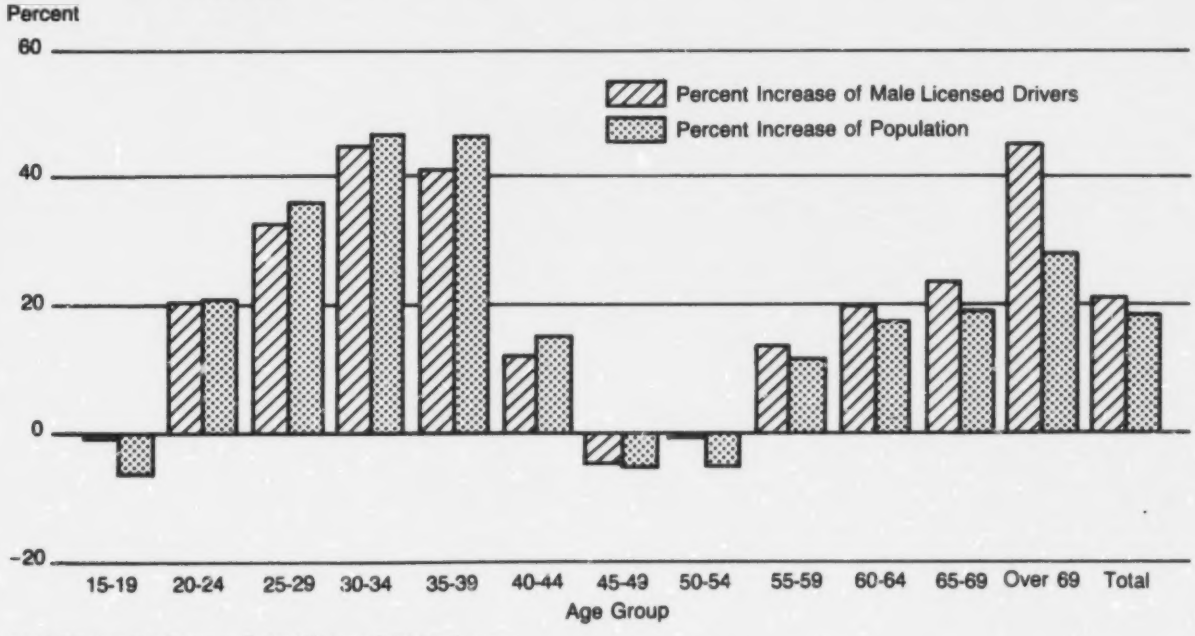
Figure A-15. **Distribution of Male Licensed Drivers and Population by Age Group, 1983**



SOURCE: Licensed Drivers — Federal Highway Administration.
Population: Bureau of the Census.

Figure A-16. **Percent Increase in Male Licensed Drivers and Population by Age Group, 1973-1983**



SOURCE: Licensed Drivers — Federal Highway Administration.
Population: Bureau of the Census.

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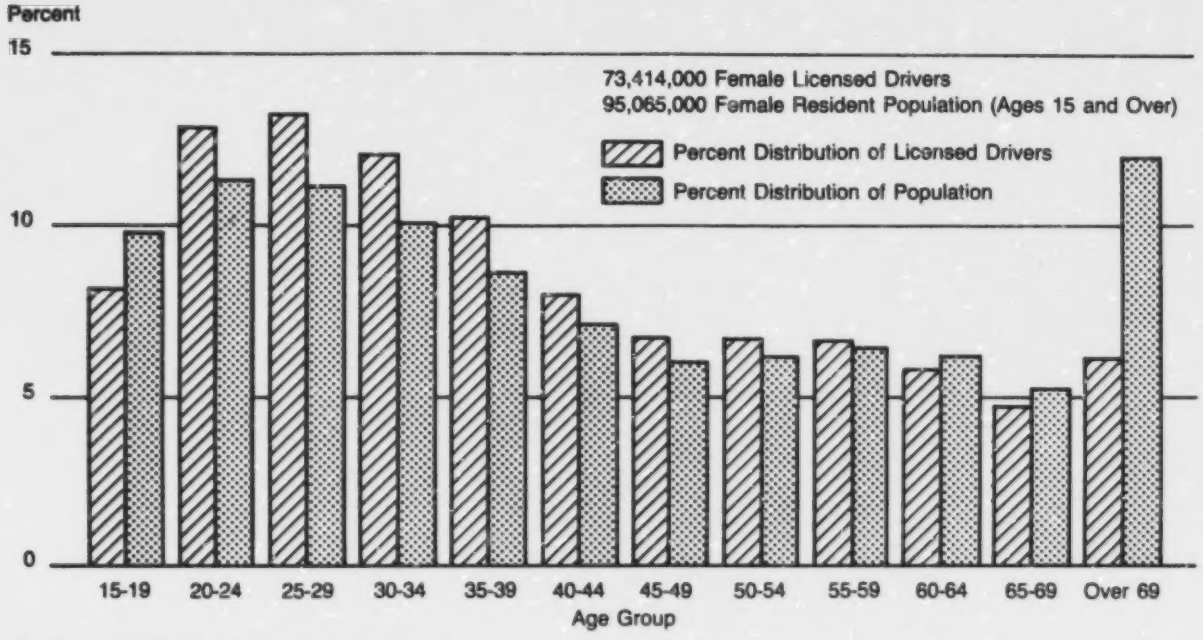
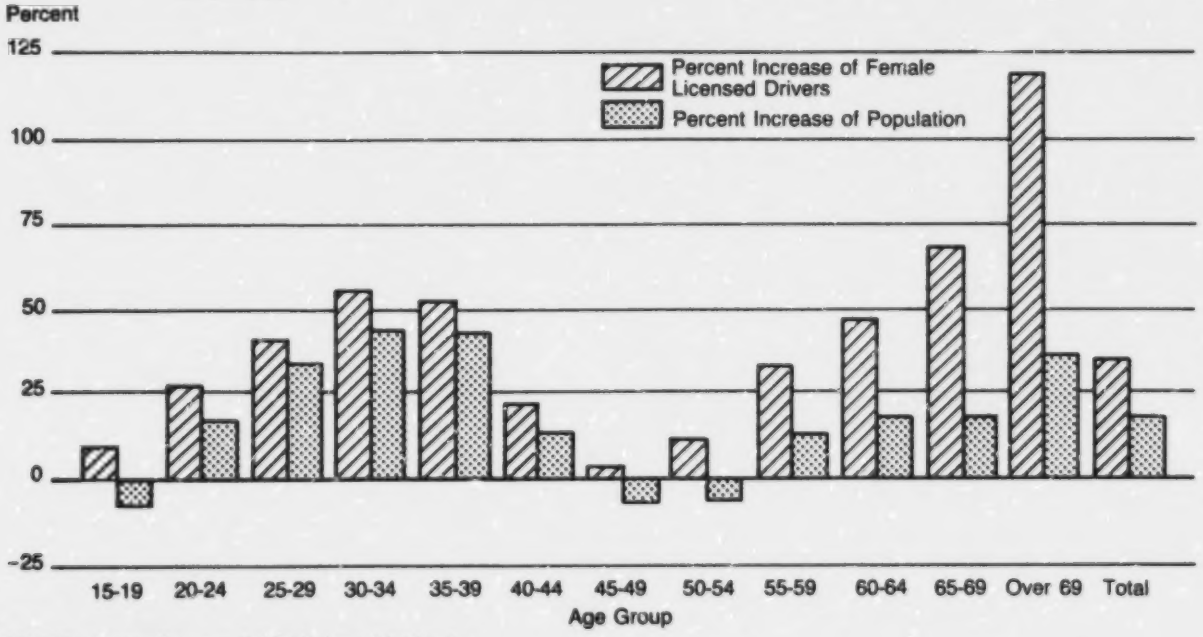
Figure A-17. Distribution of Female Licensed Drivers and Population by Age Group, 1983



SOURCE: Licensed Drivers — Federal Highway Administration.
Population: Bureau of the Census.

Figure A-18. Percent Increase in Female Licensed Drivers and Population by Age Group, 1973-1983



SOURCE: Licensed Drivers — Federal Highway Administration.
Population: Bureau of the Census.

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Table A-11. **Percent Distribution, by Age, of Drivers Involved in Fatal Accidents, 1983**

Type of Accident	Age of Driver						
	Under 20	20-24	25-34	35-44	45-54	55-64	Over 64
Licensed Drivers	7.4	12.9	25.0	17.9	13.3	12.4	11.1
All Fatal Accidents	13.7	19.6	26.5	14.8	9.1	7.1	7.4
Single Vehicle:							
Overturn in Road	13.1	22.7	28.8	14.2	6.9	4.6	3.4
Other Noncollision	16.4	20.9	29.1	14.5	7.4	5.9	3.8
Collision w/Fixed Object	17.8	24.5	26.6	12.5	7.1	5.6	5.4
Multi-Vehicle:							
Rear End	9.4	17.0	27.9	17.4	11.2	8.8	6.8
Head On	12.9	18.2	27.3	15.9	10.7	8.0	6.8
Angle	12.4	17.3	25.2	14.7	9.5	8.1	12.5
Sideswipe	11.1	18.9	25.8	17.3	10.7	8.0	7.1
Pedestrian	10.4	18.1	25.5	14.8	8.8	6.0	4.8
Pedalcyclist	13.2	18.0	23.2	15.3	11.1	8.0	5.4

SOURCE: Fatal Accident Reporting System (FARS), NHTSA.

NOTE: Drivers under 25 are over-involved in all types of accidents, compared to the total number of licensed drivers in that age group. The over-involvement is greatest for single-vehicle accidents. Both male and female drivers in this age group show the same pattern of over-representation. Drivers ages 35 and older are generally in fewer accidents than would be expected on the basis of their numbers.

Table A-12. **Percent Distribution, by Age, of Male Drivers Involved in Fatal Accidents, 1983**

Type of Accident	Age of Driver						
	Under 20	20-24	25-34	35-44	45-54	55-64	Over 64
Licensed Drivers	7.4	12.9	24.6	17.6	13.3	12.5	11.7
All Fatal Accidents	13.6	20.3	27.7	14.9	9.3	6.9	7.0
Single Vehicle:							
Overturn in Road	17.6	23.1	29.6	14.8	7.1	4.3	3.4
Other Noncollision	15.2	21.0	29.5	14.9	8.2	6.5	3.4
Collision w/Fixed Object	17.7	25.2	27.6	12.2	7.0	5.3	4.7
Multi-Vehicle:							
Rear End	9.2	17.1	29.0	17.4	11.5	8.6	6.8
Head On	12.7	18.1	28.1	15.8	10.9	7.7	6.6
Angle	12.2	18.0	26.1	14.7	9.4	7.6	11.8
Sideswipe	10.9	19.0	26.8	17.0	11.3	8.2	6.7
Pedestrian	10.7	20.0	29.2	16.5	9.9	7.1	5.3
Pedalcyclist	13.2	20.2	25.2	15.1	11.8	8.1	5.3

SOURCE: Fatal Accident Reporting System (FARS), NHTSA.

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Table A-13. Percent Distribution, by Age, of Female Drivers Involved in Fatal Accidents, 1983

Type of Accident	Age of Driver						
	Under 20	20-24	25-34	35-44	45-54	55-64	Over 64
Licensed Drivers	7.1	12.9	25.3	18.2	13.4	12.4	10.7
All Fatal Accidents	15.2	18.3	23.8	15.5	9.3	8.4	9.5
Single Vehicle:							
Overturn in Road	26.3	20.6	25.2	11.7	6.3	6.1	3.8
Other Noncollision	22.1	21.4	29.0	13.7	4.6	3.8	5.3
Collision w/Fixed Object	18.9	21.1	22.3	13.8	7.8	7.3	8.8
Multi-Vehicle:							
Rear End	11.1	17.7	24.5	18.2	10.4	10.5	7.6
Head On	13.4	18.3	24.8	16.5	10.0	9.2	7.6
Angle	12.9	15.2	22.4	14.8	9.8	9.7	15.1
Sideswipe	12.8	19.3	22.8	19.3	8.6	7.2	9.3
Pedestrian	15.0	21.3	26.2	16.5	9.4	5.6	5.6
Pedalcyclist	16.4	14.0	21.6	19.9	11.1	9.9	7.0

SOURCE: Fatal Accident Reporting System (FARS), NHTSA.

Table A-14. Traffic Fatalities by Age Group, 1975, 1982, 1983

	1975	1982	1983	Percent Change 1975-83	Percent Change 1982-83
All Ages	44,525	43,945	42,584	-4.4	-3.1
0 - 4	1,313	1,003	980	-25.4	-2.3
5 - 14	3,182	2,179	2,106	-33.8	-3.4
15 - 24	15,465	14,912	13,934	-9.9	-6.6
25 - 34	7,503	9,267	9,155	+22.0	-1.2
35 - 44	4,191	4,848	4,777	+14.0	-1.5
45 - 54	3,939	3,340	3,260	-17.2	-2.4
55 - 64	3,398	3,147	3,105	-8.6	-1.3
65 & Over	5,326	5,005	5,076	-4.7	+1.4
Age Not Stated	208	244	191	-8.2	-21.7

SOURCE: Fatal Accident Reporting System (FARS), NHTSA (30-day traffic deaths).

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Table A-15. Number and Distribution of Motor Vehicle Traffic Fatalities by Type, 1963-1983

	Total		Bicyclists*		Motorcyclists		Pedestrians*		Others**	
Year	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1963	41,723	100.00	580	1.39	940	2.25	7,430	17.81	32,773	78.55
1964	45,645	100.00	690	1.51	1,240	2.72	8,100	17.74	35,615	78.03
1965	47,089	100.00	690	1.47	1,650	3.50	7,990	16.97	36,759	78.06
1966	50,894	100.00	730	1.44	2,230	4.38	8,530	16.76	39,404	77.42
1967	50,724	100.00	750	1.48	2,170	4.28	8,460	16.68	39,344	77.56
1968	52,725	100.00	700	1.33	1,940	3.68	8,800	16.69	41,285	78.30
1969	53,543	100.00	710	1.33	1,870	3.49	8,710	16.27	42,253	78.91
1970	52,627	100.00	760	1.44	2,280	4.33	8,950	17.01	40,637	77.22
1971	52,542	100.00	860	1.64	2,650	5.04	9,100	17.32	39,932	76.00
1972	54,589	100.00	990	1.82	3,030	5.55	9,200	16.85	41,369	75.78
1973	54,052	100.00	1,070	1.98	3,230	5.98	8,930	16.52	40,822	75.52
1974	45,196	100.00	1,040	2.30	3,370	7.46	7,540	16.68	33,246	73.56
1975	44,525	100.00	1,003	2.25	3,189	7.16	7,516	16.88	32,817	73.71
1976	45,523	100.00	914	2.01	3,312	7.28	7,427	16.31	33,870	74.40
1977	47,878	100.00	922	1.93	4,104	8.57	7,732	16.15	35,120	73.35
1978	50,331	100.00	892	1.77	4,577	9.09	7,795	15.49	37,067	73.65
1979	51,093	100.00	932	1.82	4,893	9.58	8,096	15.85	37,172	72.75
1980	51,091	100.00	965	1.89	5,144	10.07	8,070	15.80	36,912	72.25
1981	49,301	100.00	936	1.90	4,906	9.95	7,837	15.90	35,622	72.25
1982	43,945	100.00	883	2.01	4,453	10.13	7,331	16.68	31,278	71.18
1983	42,584	100.00	839	1.97	4,264	10.01	6,824	16.02	30,657	71.99

SOURCES: Deaths: 1962-74, estimated by NHTSA from data supplied by the National Center for Health Statistics, H.H.S., and State Accident Summaries (Adjusted to 30-day deaths).
1975-82 from Fatal Accident Reporting System (FARS), NHTSA.

NOTES: *Motor vehicle involvement only.
**"Others" includes, primarily, drivers and passengers in motor vehicles other than motorcycles and motorscooters. There are a few riders of animals, occupants of animal-drawn vehicles, occupants of street cars, unauthorized riders, etc., also in the category.

Table A-16. Number and Population Death Rate of Motor Vehicle Traffic Fatalities by Type in the Accident, 1963-1983

	Resident Pop.	Total Deaths		Bicyclists*		Motorcyclists		Pedestrians*		Others**	
Year	(100,000)	Number	Rate***	Number	Rate***	Number	Rate***	Number	Rate***	Number	Rate***
1963	1884.83	41,723	22.14	580	0.31	940	0.50	7,430	3.94	32,773	17.39
1964	1911.41	45,645	23.88	690	0.36	1,240	0.65	8,100	4.24	35,615	18.63
1965	1935.26	47,089	24.33	690	0.36	1,650	0.85	7,990	4.13	36,759	18.99
1966	1955.76	50,894	26.02	730	0.37	2,230	1.14	8,530	4.36	39,404	20.15
1967	1974.57	50,724	25.69	750	0.38	2,170	1.10	8,460	4.28	39,344	19.93
1968	1993.99	52,725	26.44	700	0.35	1,940	0.97	8,800	4.41	41,285	20.71
1969	2013.85	53,543	26.59	710	0.35	1,870	0.93	8,710	4.33	42,253	20.98
1970	2039.84	52,627	25.80	760	0.37	2,280	1.12	8,950	4.39	40,637	19.92
1971	2068.27	52,542	25.40	860	0.42	2,650	1.28	9,100	4.40	39,932	19.31
1972	2092.84	54,589	26.08	990	0.47	3,030	1.45	9,200	4.40	41,369	19.77
1973	2113.57	54,052	25.57	1,070	0.51	3,230	1.53	8,930	4.23	40,822	19.31
1974	2133.42	45,196	21.18	1,040	0.49	3,370	1.58	7,540	3.53	33,246	15.58
1975	2154.65	44,525	20.66	1,003	0.47	3,189	1.48	7,516	3.49	32,817	15.23
1976	2175.63	45,523	20.92	914	0.42	3,312	1.52	7,427	3.41	33,870	15.57
1977	2197.60	47,878	21.79	922	0.42	4,104	1.87	7,732	3.52	35,120	15.98
1978	2220.95	50,331	22.66	892	0.40	4,577	2.06	7,795	3.51	37,067	16.69
1979	2245.67	51,093	22.75	932	0.42	4,893	2.18	8,096	3.61	37,172	16.55
1980	2272.36	51,091	22.49	965	0.42	5,144	2.26	8,070	3.55	36,912	16.25
1981	2295.18	49,301	21.50	936	0.41	4,906	2.14	7,837	3.42	35,622	15.53
1982	2317.84	43,945	18.98	883	0.38	4,453	1.92	7,331	3.17	31,278	13.51
1983	2339.81	42,584	18.20	839	0.36	4,264	1.82	6,824	2.92	30,657	13.10

SOURCES: Population: U.S. Bureau of the Census (July 1 estimate).
Deaths: 1963-74, estimated by NHTSA from data supplied by the National Center for Health Statistics, H.H.S., and State Accident Summaries (Adjusted to 30-day deaths).
1975-83 from Fatal Accident Reporting System (FARS), NHTSA.

NOTES: *Motor vehicle involvement only.
**"Others" includes, primarily, drivers and passengers in motor vehicles other than motorcycles and motorscooters. There are a few riders of animals, occupants of animal-drawn vehicles, occupants of street cars, unauthorized riders, etc., also in the category.
***Deaths per 100,000 resident population.

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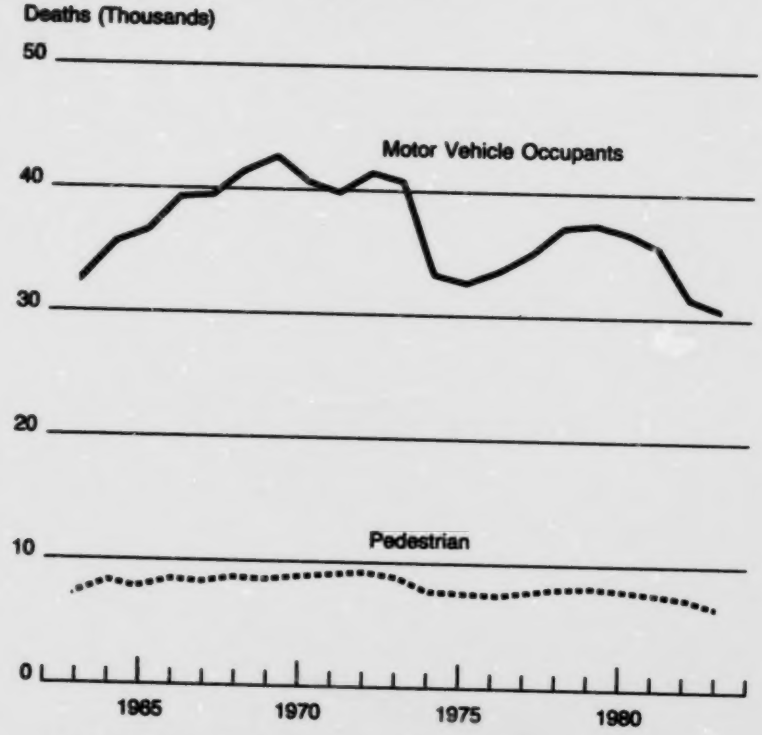
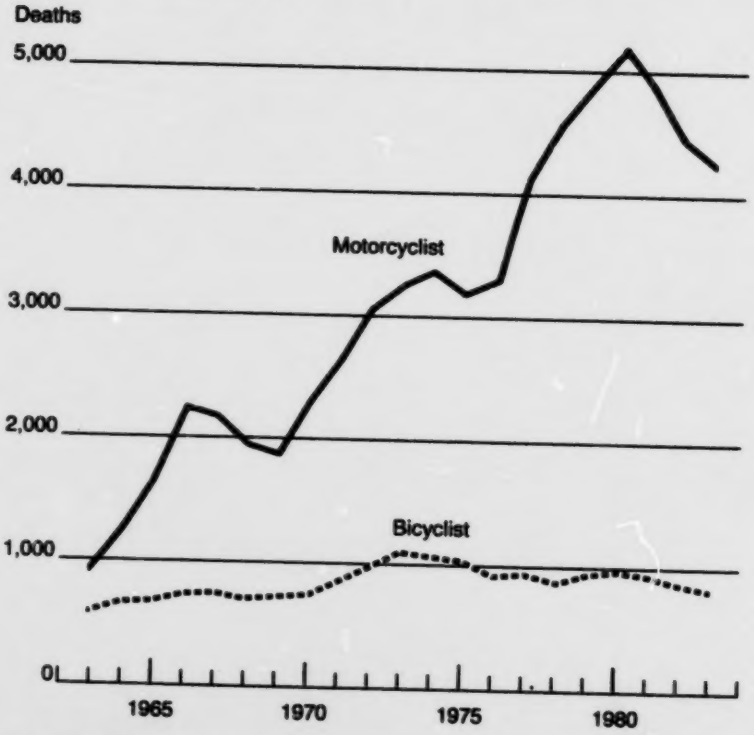
Figure A-19. Pedestrian and Motor Vehicle Occupant Fatalities, 1963-1983



SOURCES: 1962-74, Estimated by NHTSA from data supplied by National Center for Health Statistics, HHS, and State Accident Summaries (adjusted to 30-day deaths). 1975-83 Fatal Accident Reporting System (FARS), NHTSA.

Figure A-20. Motorcycle and Bicycle Fatalities, 1963-1983



SOURCES: 1962-74, Estimated by NHTSA from data supplied by National Center for Health Statistics, HHS, and State Accident Summaries (adjusted to 30 day deaths). 1975-83 Fatal Accident Reporting System (FARS), NHTSA.

Table A-17. Leading Causes of Death by Age and Sex, United States, 1981

Age Group	Cause of Death	Total			Male			Female		
		Rank	Deaths	%	Rank	Deaths	%	Rank	Deaths	%
All Ages	Diseases of the Heart	1	755,082	38.1	1	401,395	37.7	1	353,687	38.6
	Malignant Neoplasms (Cancer)	2	422,584	21.3	2	228,186	21.4	2	194,398	21.2
	Cerebrovascular Disease (Stroke)	3	163,671	8.3	3	66,531	6.2	3	97,140	10.6
	Motor Vehicle Accidents	4	51,669	2.6	4	37,746	3.5	8	13,923	1.5
	Pneumonia	5	50,778	2.6	7	25,991	2.4	4	24,787	2.7
	Nontransport Accidents	6	45,918	2.3	5	30,390	2.9	7	15,528	1.7
	Other Chronic Obstructive Pulmonary Diseases	7	38,744	2.0	6	26,567	2.5	10	12,177	1.3
	Diabetes Mellitus	8	34,680	1.8	12	14,233	1.3	5	20,447	2.2
	Atherosclerosis	11	28,012	1.4	14	10,976	1.0	6	17,036	1.9
Under 1	Certain Conditions Originating in the Perinatal Period	1	21,556	49.0	1	12,255	49.1	1	9,301	48.7
	Congenital Anomalies	2	8,964	20.4	2	4,803	19.3	2	4,161	21.8
	Symptoms, Signs and Ill-Defined Conditions	3	6,018	13.7	3	3,599	14.4	3	2,419	12.7
	Diseases of the Heart	4	910	2.1	4	494	2.0	4	416	2.2
	Nontransport Accidents	5	820	1.9	5	482	1.9	6	338	1.8
	Pneumonia	6	813	1.8	6	473	1.9	5	340	1.8
	Motor Vehicle Accidents	13	270	0.6	12	160	0.6	14	110	0.6
1-4	Nontransport Accidents	1	2,085	25.8	1	1,326	28.7	1	759	21.9
	Motor Vehicle Accidents	2	1,042	12.9	2	577	12.5	3	465	13.4
	Congenital Anomalies	3	1,040	12.8	3	534	11.5	2	506	14.6
	Malignant Neoplasms (Cancer)	4	661	8.2	4	372	8.0	4	289	8.3
	Other Diseases of Nervous System and Sense Organs	5	472	5.8	5	263	5.7	5	209	6.0
	Homicide and Legal Intervention	6	342	4.2	6	184	4.0	7	158	4.6
	Diseases of the Heart	7	339	4.2	7	174	3.8	6	165	4.8
5-9	Motor Vehicle Accidents	1	1,188	25.2	1	771	27.1	1	417	22.3
	Nontransport Accidents	2	1,003	21.3	2	666	23.4	2	337	18.1
	Malignant Neoplasms (Cancer)	3	731	15.5	3	421	14.8	3	310	16.6
	Congenital Anomalies	4	296	6.3	4	150	5.3	4	146	7.8
	Other Diseases of Nervous System and Other Sense Organs	5	246	5.2	5	128	4.5	5	118	6.3
	Homicide and Legal Intervention	6	156	3.3	6	88	3.1	7	68	3.6
	Diseases of the Heart	7	147	3.1	7	78	2.7	6	69	3.7
10-14	Motor Vehicle Accidents	1	1,393	25.6	1	936	27.0	1	457	23.0
	Nontransport Accidents	2	1,116	20.5	2	868	25.1	3	248	12.5
	Malignant Neoplasms (Cancer)	3	687	12.6	3	392	11.3	2	295	14.9
	Homicide and Legal Intervention	4	285	5.2	4	160	4.6	5	125	6.3
	Congenital Anomalies	5	266	4.9	5	139	4.0	4	127	6.4
	Other Diseases of Nervous System and Sense Organs	6	245	4.5	6	130	3.8	6	115	5.8
15-19	Motor Vehicle Accidents	1	7,970	42.9	1	5,820	43.0	1	2,150	42.6
	Nontransport Accidents	2	2,336	12.6	2	1,998	14.8	5	338	6.7
	Homicide and Legal Intervention	3	2,078	11.2	3	1,617	12.0	2	461	9.1
	Suicide	4	1,770	9.5	4	1,413	10.4	4	357	7.1
	Malignant Neoplasms (Cancer)	5	1,061	5.7	5	635	4.7	3	426	8.4
	Other Diseases of Nervous System and Sense Organs	6	397	2.1	6	280	2.1	8	117	2.3
	Diseases of the Heart	7	388	2.1	8	235	1.7	6	153	3.0
20-24	Motor Vehicle Accidents	1	9,467	35.3	1	7,480	36.7	1	1,987	31.0
	Homicide and Legal Intervention	2	4,120	15.4	2	3,292	16.1	2	828	12.9
	Suicide	3	3,400	12.7	3	2,797	13.7	3	603	9.4
	Nontransport Accidents	4	3,186	11.9	4	2,735	13.4	5	451	7.0
	Malignant Neoplasms (Cancer)	5	1,347	5.0	5	824	4.0	4	523	8.2
	Diseases of the Heart	6	698	2.6	6	443	2.2	6	255	4.0
25-29	Motor Vehicle Accidents	1	6,548	25.2	1	5,206	27.2	1	1,342	19.7
	Homicide and Legal Intervention	2	3,979	15.3	2	3,274	17.1	4	705	10.4
	Suicide	3	3,445	13.3	3	2,686	14.0	3	759	11.1
	Nontransport Accidents	4	2,972	11.4	4	2,483	13.0	5	489	7.2
	Malignant Neoplasms (Cancer)	5	1,969	7.6	5	1,062	5.5	2	907	13.3
	Diseases of the Heart	6	1,157	4.5	6	757	4.0	6	400	5.9

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Table A-17. Leading Causes of Death by Age and Sex, United States, 1981 (Continued)

Age Group	Cause of Death	Total			Male			Female		
		Rank	Deaths	%	Rank	Deaths	%	Rank	Deaths	%
30-34	Motor Vehicle Accidents	1	4,626	18.1	1	3,619	20.3	2	1,007	13.0
	Homocide and Legal Intervention	2	3,226	12.6	2	2,634	14.8	5	592	7.6
	Malignant Neoplasms (Cancer)	3	3,115	12.2	6	1,395	7.8	1	1,720	22.2
	Suicide	4	2,916	11.4	3	2,236	12.6	3	680	8.8
	Nontransport Accidents	5	2,515	9.8	4	2,070	11.6	6	445	5.7
	Diseases of the Heart	6	2,116	8.3	5	1,466	8.2	4	650	8.4
35-39	Malignant Neoplasms (Cancer)	1	4,695	18.0	3	2,031	11.9	1	2,664	29.9
	Diseases of the Heart	2	3,967	15.2	1	2,971	17.3	2	996	11.2
	Motor Vehicle Accidents	3	3,045	11.7	2	2,320	13.5	3	725	8.1
	Suicide	4	2,283	8.8	5	1,661	9.7	4	622	7.0
	Homicide and Legal Intervention	5	2,191	8.4	4	1,802	10.5	8	389	4.4
	Nontransport Accidents	6	1,841	7.1	6	1,448	8.4	7	393	4.4
	Chronic Liver Disease and Cirrhosis	7	1,359	5.2	7	910	5.3	6	449	5.0
	Cerebrovascular Disease (Stroke)	8	920	3.5	8	464	2.7	5	456	5.1
40-44	Malignant Neoplasms (Cancer)	1	7,833	23.9	2	3,575	17.1	1	4,258	36.2
	Diseases of the Heart	2	7,503	22.9	1	5,706	27.2	2	1,797	15.3
	Motor Vehicle Accidents	3	2,318	7.1	3	1,730	8.3	4	588	5.0
	Suicide	4	1,932	5.9	4	1,351	6.4	5	581	4.9
	Chronic Liver Disease and Cirrhosis	5	1,876	5.7	7	1,303	6.2	6	573	4.9
	Nontransport Accidents	6	1,693	5.2	6	1,304	6.2	7	389	3.3
	Homicide and Legal Intervention	7	1,639	5.0	5	1,331	6.4	8	308	2.6
	Cerebrovascular Disease (Stroke)	8	1,323	4.0	8	657	3.1	3	666	5.7
45-54	Malignant Neoplasms (Cancer)	1	40,203	31.0	2	20,429	24.9	1	19,774	41.7
	Diseases of the Heart	2	40,183	31.0	1	30,363	37.0	2	9,820	20.7
	Chronic Liver Disease and Cirrhosis	3	6,401	4.9	3	4,259	5.2	4	2,142	4.5
	Cerebrovascular Disease (Stroke)	4	5,613	4.3	6	2,899	3.5	3	2,714	5.7
	Motor Vehicle Accidents	5	4,053	3.1	5	2,943	3.6	6	1,110	2.3
	Nontransport Accidents	6	3,972	3.1	4	2,956	3.6	7	1,016	2.1
	Suicide	7	3,633	2.8	7	2,458	3.0	5	1,175	2.5
55-64	Diseases of the Heart	1	105,886	36.4	1	74,585	40.9	2	31,301	28.9
	Malignant Neoplasms (Cancer)	2	95,494	32.9	2	53,172	29.2	1	42,322	39.1
	Cerebrovascular Disease (Stroke)	3	13,831	4.8	3	7,357	4.0	3	6,474	6.0
	Chronic Liver Disease and Cirrhosis	4	8,643	3.0	4	5,682	3.1	4	2,961	2.7
	Other Chronic Obstructive Pulmonary Diseases	5	6,018	2.1	5	3,927	2.2	6	2,091	1.9
	Diabetes Mellitus	6	5,632	1.9	7	2,714	1.5	5	2,918	2.7
	Nontransport Accidents	7	4,727	1.6	6	3,406	1.9	8	1,321	1.2
	Motor Vehicle Accidents	9	3,821	1.3	8	2,574	1.4	9	1,247	1.2
65+	Diseases of the Heart	1	591,606	44.0	1	284,018	43.2	1	307,588	44.8
	Malignant Neoplasms (Cancer)	2	264,644	19.7	2	143,792	21.9	2	120,852	17.6
	Cerebrovascular Disease (Stroke)	3	140,307	10.4	3	54,291	8.3	3	86,016	12.5
	Pneumonia	4	42,355	3.2	5	20,658	3.1	4	21,697	3.2
	Other Chronic Obstructive Pulmonary Diseases	5	31,212	2.3	4	21,746	3.3	7	9,466	1.4
	Atherosclerosis	6	26,726	2.0	6	10,154	1.5	5	16,572	2.4
	Diabetes Mellitus	7	25,204	1.9	7	9,418	1.4	6	15,786	2.3
	Motor Vehicle Accidents	20	5,928	0.4	17	3,610	0.5	25	2,318	0.3

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Appendix B

The National Highway Safety Advisory Committee, 1983 Membership

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U.S. Department of Transportation

National Highway Safety Advisory Committee

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Appendix C
Funding Tables

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Table C-1. Summary of Authorizations and Appropriations, Fiscal Years 1974-1984 (Millions of Dollars)

	FY74	FY75	FY76	FY77	FY78	FY79	FY80	FY81	FY82	FY83	FY84
Operations and Research Appropriation:											
Traffic and Motor Vehicle Safety Programs:											
Authorization	30.5[1]	55.0	60.0	60.0	60.0	43.6[1]	45.2[1]	49.4[1]	43.4[1]	51.4	55.0
Appropriation	30.5	35.1	38.0	41.8	42.4	43.6	45.2	49.4	43.4	48.1	52.0
Automotive Fuel Economy and Consumer Information:											
Authorization	37.0	48.0	7.5	13.9	16.7	12.4[1]	12.4[1]	9.5[1]	7.7[1]	4.2	4.2
Appropriation	15.0	7.7	1.0	7.4	10.2	12.4	12.4	9.5	7.7	4.2	4.1
Highway Safety Research and Development Programs:											
Authorization	42.5	55.0	65.0	40.0	50.0	50.0	50.0	50.0	31.0	31.0	31.0
Appropriation	39.4	28.1	29.0	27.1	26.8	26.1	26.1	27.0	23.8	21.7	21.9
Total Operations and Research Appropriation											
Authorization	110.0	158.0	132.5	113.9	126.7	106.0	107.6	108.9	82.1	86.6	90.2
Appropriation	84.9[2]	70.9	68.0	76.3	79.4	82.1	83.7	85.9	74.9	74.0	78.0
Highway Traffic Safety Grant Program:											
Safety Formula Grants/ School Bus Driver Training											
Authorization	100.0	125.0	150.0	122.0	137.0	177.5	177.5	202.5	102.5	101.5	100.0
Obligation Limitation/ Appropriation	66.5	73.0	87.7	114.0	157.0[3]	172.0	177.5	163.0[4]	97.5	96.5	100.0
Safety Belt and Accident Reduction Incentives											
Authorization	37.5	48.0	56.5	15.0	15.0						
Obligation Limitation	.3	13.1	13.2	15.0	15.0						
National 55 MPH Speed Limit (Including Incentives)											
Authorization						50.0	67.5	67.5	[5]	[5]	[5]
Appropriation							20.0	25.0			
Innovative Grants											
Authorization							5.0	10.0			
Appropriation								1.0			
Alcohol Incentive Grants											
Authorization										25.0	50.0
Appropriation										5.0[6]	37.9
Highway Safety Education and Information											
Authorization										16.0	
Obligation Limitation										1.0[5]	5.0[7]
Total NHTSA											
Authorization	137.5	173.0	206.5	137.0	152.0	227.5	250.0	280.0	102.5	142.5	150.0
Appropriation/Obligation Limitation	66.8	86.1	100.9	129.0	172.0	172.5	197.5	189.0	97.5	102.5	142.9
FHWA (Safety Formula Grants)											
Authorization	25.0	30.0	35.0	25.0	25.0	25.0	25.0	25.0	10.0	.3	10.0
Obligation Limitation	13.2	14.7	19.1	21.0	28.0[3]	28.0[3]	28.0[3]	28.0[3]	10.0	10.0[3]	10.0
Total Highway Traffic Safety Grant Program											
Authorization	162.5	203.0	241.5	162.0	177.0	252.5	275.0	305.0	112.5	142.8	160.0
Appropriation/Obligation Limitation	30.0	100.8	120.0	150.0	200.0	200.0	225.5	217.0	107.5	112.5	152.9

[1]Authorization obtained from the Appropriation Act during these years.
[2]Includes $9 million transferred from the 1972 Appropriation for the Compliance Test Facility.
[3]Part of this obligation level financed from prior year carryover authorizations.
[4]Includes $10 million appropriated for the Transportation Systems Management program.
[5]Twenty percent of the authorization for Section 402 grants must be obligated for enforcement of the National Maximum Speed Limit.
[6]Estimated obligations — programs not addressed by the Appropriations Committees in 1983.
[7]Cumulative limitation for 1983 and 1984.

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Table C-2. **History of NHTSA Personnel Strengths (Full-time Permanent Positions) Fiscal Years 1974-1984**

	FY 1974			FY 1975			FY 1976			FY 1977			FY 1978			FY 1979			FY 1980			FY 1981			FY 1982			FY 1983			FY 1984		
	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Actual Year End	President's Budget	Appropriated	Projected Year End
Program Direction & Coordination	94	94	80	93	93	88	97	97	95	97	104	99	107	104	99	109	109	107	109	109	103	105	105	99	98	98	88	98	98	84			
Office of the Administrator																															41	68	65
Motor Vehicle Programs	225	225	148	225	225	155	197	197	157	202	202	163	196	183	144																		
Rulemaking Programs																55	55	52	58	56	57	49	49	49	47	53	49	53	53	44	42	48	45
Enforcement Programs																88	86	83	92	92	77	90	90	82	84	81	71	81	81	68	81	83	80
Highway Safety Programs	119	109	122	124	124	134	134	134	131	134	136	131	131	131	126	129	129	121	129	129	113	115	115	106	80	82	77	82	82	72	79	82	80
Research and Analysis	178	178	149	166	166	150	183	183	165	180	185	169	183	183	173	195	195	184	188	188	171	172	172	162	152	150	128	150	150	125	133	136	127
Staff and Administrative Support	119	119	112	124	124	119	124	124	117	124	126	117	125	125	113	122	122	114	122	122	112	111	111	98	102	102	91	102	102	83			
General Administration																															138	116	109
Automotive Fuel Economy & Consumer Information	40	40	36	38	33	21	30	30	38	25	51	21	61	61	40	61	61	58	61	61	61	50	50	44	43	37	33	37	37	23	23	23	23
Subtotal	765	765	647	765	765	667	765	765	700	762	802	705	803	787	895	759	759	719	759	759	696	692	692	640	606	603	537	603	603	499	537	596	528
Regional Offices	116	116	114	116	118	117	116	116	113	116	116	113	115	115	110	115	115	109	115	115	111	105	105	103	80	83	82	83	83	80	80	84	80
Grand Total	881	881	761	881	881	784	881	881	813	878	918	818	918	902	805	874	874	826	874	874	805	797	797	743	686	686	619	686	686[1]	579	617	640	608

[1]Internal allocation set at 617 positions.

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Appendix D
Research Notes

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1983 RESEARCH NOTES

TITLE	AUTHOR	DATE
The Trucking Industry in the United States A Preliminary Characterization	Leasure	1983
A Retrospective Analysis of the General Motors Air Cushion Restraint System Marketing Effort, 1974 to 1976	Gauthier	Oct. 1983
Development of Anthropometrically Based Design Specifications for an Advanced Adult Anthropomorphic Dummy Family	Haffner	Nov. 1983
Location of Hood Edge Affects Pedestrian Injuries	Hofferberth	Nov. 1983
Air Brake Adjustment is Critical	Radlinski	Nov. 1983
The Accuracy of Skid Marks for Predicting Pre-Crash Speed	Garrott	Nov. 1983
National Center for Statistics and Analysis Analytical Studies: Oct. 1982 - March 1983		May 1983
Early Assessment of 1982 Traffic Fatalities	Cerrelli	May 1983
Infants and Toddlers in Passenger Car Crashes	Partyka	May 1983
Simple Models of Fatality Trends Using Employment and Population Data	Partyka	Sept. 1983
Comparison by Age of Drivers in Two-Car Fatal Crashes	Partyka	Sept. 1983
Accident Rates for Passenger Cars Passively Involved in Rear-End Collisions	Richardson	Aug. 1983
State Injury Estimates Based Upon a Synthesis of National Accident Data	Partyka	Oct. 1983
Development of Industry-Based Strategies for Motivating Seat-Belt Use	Bigelow	April 1983
Corporate Incentives for Promoting Safety Belt Use: Rationale, Guidelines, and Examples	Bigelow	April 1983
Guidelines for Conducting a Survey of the Use of Safety Belts and Child Safety Seats	Ziegler	May 1983
Identification of Motivations for Unsafe Driving Actions and Potential Countermeasures	Vegega	May 1983

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RESEARCH NOTES 1983-Continued

TITLE	AUTHOR	DATE
Reducing Alcohol-Impaired Driving: Survey for Use in Measuring Program Effectiveness	Vegega	May 1983
Demographic, Situational and Motivational Factors Affecting Safety Belt Use	Bigelow	June 1983
Manual for Assessing the Safety Relevance of Pedestrian and Bicyclist Programs	Levy	July 1983
Analysis for Drugs in Saliva and Breath	Frank	July 1983
Norms and Attitudes Related to Alcohol Usage	Vegega	July 1983
Non-Use of Motor Vehicle Safety Belts as an Issue in Civil Litigation	Hawley	July 1983
A Simulator Study of the Combined Effects of Alcohol and Marihuana on Driving Behavior	Schweitz	Aug. 1983
Identification of DWI Behavior Patterns and Methods for Change	Schweitz	Aug. 1983
Protecting Drivers of Disabled Vehicles	Levy	Aug. 1983
Impact of Travel Patterns and Driving Behavior on Crash Involvement	—	Aug. 1983
19-City Safety Belt and Child Safety Seat Use Observation Survey	—	Aug. 1983
Older Driver Retraining	Smith	Sept. 1983
Crash Risk of Licensed Driver Hospitalized for Heart Disease Related to Coronary Insufficiency	Eberhard/ Sleet	Nov. 1983
Development of Effective Behavioral Test Procedures for Alcohol-Impaired Driver Identification	Anderson	Nov. 1983
Motivation of Restraint Systems Usage Among Specific Target Groups of Drivers and Passengers	Ziegler	Dec. 1983
Young Driver Risk Taking Research	Smith	Dec. 1983

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Appendix E

Publications of the National Highway Traffic Safety Administration and the Federal Highway Administration

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Appendix E. Publications of the National Highway Traffic Safety Administration and the Federal Highway Administration

[This List Comprises National Highway Safety Administration Publications Issued During 1983. Titles Are Arranged Alphabetically and May Be Obtained from the General Services Division, Room 6117 (NAD-51), 400 7th Street, S.W., Washington, D.C. 20590. Telephone (202) 426-0874]

1. *Acts Administered by NHTSA.*
   - A. Highway Safety Act of 1966; Motor Vehicle Information and Cost Savings Act; National Traffic and Motor Vehicle Safety Act of 1966. June 1983 Revision. HS-806 461.
   - B. Highway Safety Act of 1966. June 1983 Revision. HS-806 462.
   - C. Motor Vehicle Information and Cost Savings Act. June 1983 Revision. HS-806 464.
   - D. National Traffic and Motor Vehicle Safety Act of 1966. June 1983 Revision. HS-806 463.
2. *Assessment of the 1982 Traffic Fatality Decrease.* HS-806 490.
3. *Automotive Fuel Economy, Seventh (7th) Annual Report to Congress.* January 1983. HS-806 373.
4. *Digest of State Alcohol-Highway Safety Related Legislation*, 2nd ed. August 1983. HS-806 480.
5. *Driver Improvement System for Traffic Violators.* November 1982. HS-806 284.
6. *Driver Licensing Examiner Certification Program.* HS-806 384.
7. *Early License Revocation for Driving While Under the Influence (DWUI).* 1982. HS-806 307.
8. *The Economic Cost to Society of Motor Vehicle Accidents.* January 1983. HS-806 342.
9. *Fatality Trends.* 1983. HS-806 356. Numbers not assigned to future issues.
10. *A Guide to Audio Visual and Print Materials on Safety Belts.* July 1983. HS-806 418.
11. *Guide to Self-Funding Alcohol Traffic Safety Programs.* 1983. HS-806 432.
12. *Guidelines for Conducting a Survey of the Use of Safety Belts and Child Seats.* HS-806 467.
13. *How to Save Lives and Reduce Injuries — A Citizen Activist Guide to Effectively Fight Drunk Driving.* August 1982. HS-806 250.
14. *Idea Sampler: To Promote Observance of National Drunk and Drugged Driver Awareness Week.* 1983. HS-806 477.
15. *Infants and Toddlers in Passenger Car Crashes.* May 1983. HS-806 469.
16. *An Interim Report to The National from the Presidential Commission on Drunk Driving.* HS-806 343.
17. *National Safety Belt Usage Program: Progress and Assessment Report.* October 1983. HS-806 478.
18. *1982 Traffic Fatalities; Early Assessment.* April 1983. HS-806 421.
19. *Ninth (9th) International Technical Conference on Experimental Safety Vehicles.* November 1982. HS-806 341. (Microfiche; "REFERENCE COPY ONLY").*
20. *Planning for Safety Priorities: 1983 Safety Priority Plan.* April 1983. HS-806 399.
21. *Preliminary Regulatory Impact Analysis: Possible Modifications to part 581 — Bumper Standard.* HS-806 482U. (Microfiche; "REFERENCE COPY ONLY").*
22. Presentation on *Driver License Suspension/Revocations Prior to Court.* November 1982. HS-806 306.
23. *Profit in Safety Belts: A Handbook for Employers.* HS-806 493.
24. *Profit in Safety Belts: An Introduction to Employers Programs.* HS-806 492.

*These documents may be *viewed* in the Technical Reference Division, NAD-52, Room 5108, 400 7th Street, S.W., Washington, D.C. 20590.

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Appendix E. Publications of the National Highway Traffic Safety Administration and the Federal Highway Administration (Continued)

25. *Program Management Materials.* January 1983.**

    A. Manual Accident Typing (MAT) for Pedestrian Accidents

        1. Administrator's Guide MAT/CAT (one/set) HS-806 350
        2. Training Manual HS-806 352
        3. Practice Cases Booklet MAT/CAT HS-806 353
        4. Coder's Handbook HS-806 354

    B. Computer Accident Typing (CAT) for Pedestrian Accidents

        1. Administrator's Guide MAT/CAT (one/set) HS-806 350
        2. Training Manual HS-806 351
        3. Practice Cases Booklet MAT/CAT HS-806 353
        4. Coder's Handbook HS-806 355

    C. Manual Accident Typing (MAT) for Bicycle Accidents

        1. Administrator's Guide MAT/CAT (one/set) HS-806 344
        2. Training Manual HS-806 346
        3. Practice Cases Booklet MAT/CAT HS-806 347
        4. Coder's Handbook HS-806 349

    D. Computer Accident Typing (CAT) for Bicycle Accidents

        1. Administrator's Guide MAT/CAT (one/set) HS-806 344
        2. Training Manual HS-806 345
        3. Practice Cases Booklet MAT/CAT HS-806 347
        4. Coder's Manual HS-806 348

26. *Safety Related Recall Campaigns for Motor Vehicles and Motor Vehicle Equipment, including Tires.*

    A. Jan. - Dec. 1981, Annual Cumulation for 1981 HS-806 340

    B. Jan. - Dec. 1982, Annual Cumulation for 1982 HS-806 435

    C. Jan. - Dec. 1983, Annual Cumulation for 1983 HS-806 539

27. *Simple Models of Fatality Trends Using Employment and Population Data.* 1983. HS-806 491.

28. *State Alcohol Countermeasures, 1982-1983: Funding, Programs, Legislation.* March 1983. HS-806 431.

29. *Task Force Implementation Guidelines for the Development of State and Community Alcohol Highway Safety Programs.* 1983. HS-806 433.

30. *Tracking Alcohol Involvement Problems in U.S. Highway Crashes.* October 1983. HS-806 489.

31. *Traffic Laws Annotated, 1981 Annual Supplement.* 1983. HS-806 427.

32. *Traffic Safety Trends and Firecasts.* October 1983. HS-806 479.

33. *Utilization of Occupant Protection Funds in State Programs.* February 1983. HS-806 468.

34. *Who's Going to Call the First Meeting? Action Guide for Local Drunk Driving Programs.* March 1983. HS-806 385. (Microfiche; "REFERENCE COPY ONLY").*

*These documents may be *viewed* in the Technical Reference Division, NAD-52, Room 5108, 400 7th Street, S.W., Washington, D.C. 20590.

**The documents listed above may be obtained by contacting: Dr. LeRoy Dunn, National Highway Traffic Safety Administration, NTS-01, 400 7th Street, S.W. Washington, D.C. 20590.

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Appendix E. Publications of the National Highway Traffic Safety Administration and the Federal Highway Administration (Continued)

[The Following Is a List of Federal Highway Administration Reports Published During FY 1983. Information on the Availability Can Be Obtained by Contacting Those Agencies Noted.]

Title	Source Availability
1. Development of Hazardous Materials Routing Sign, FHWA/RD-82/141, March 1983. $10.00.[2]	NTIS No. PB 83219428[1]
2. Effects of Prohibiting Left-Turns at Signalized Intersections, FHWA/RD-82/143, December 1982.	Not available at this time. Will be sent to NTIS.
3. An Evaluation of Driver Behavior at Signalized Intersections, FHWA/AZ-83/180, January 1983. $13.00	NTIS No. PB 83218560
4. Synthesis of Safety Research Related to Traffic Control and Roadway Elements, FHWA/TS-82-232 and 233, December 1982. $13.50 (Cost of both volumes).	GPO Nos. S/N 050-001-002591-1[3] and S/N 050-001-00260-4
5. Traffic Signs in Complex Visual Environments, FHWA/RD-82/102, November 1982. $11.50	NTIS No. PB 83248914
6. Candidate Signal Warrants from Gap Data, FHWA/RD-82/152, February 1983. $11.50.	NTIS No. PB 83218792
7. A Decisionmaking Framework for the Evaluation of Climbing Lanes on Two-Lane, Two-Way Rural Roads: Final Report, FHWA-CA-TO-UC-82-I, California Study 80-8, October 1982. $35.00.	NTIS No. PB 84103001
8. Further Investigation of Traffic Operations on Two-Lane, Two-Way Rural Highways — Research Summary, Report No. FHWA-CA-TO-UC-82-2, December 1982. $16.00.	NTIS No. PB 83259606
9. A Portable Traffic Barrier for Work Zones, FHWA/TX-82/52+262-3, October 1982. $10.00.	NTIS No. PB 83207514
10. An End Treatment for Concrete Barriers Used in Work Zones, FHWA-TX-82/44+262-2, August 1982. $11.50.	NTIS No. PB 83207506
11. A Crash Cushion for Narrow Objects, FHWA/TX-82/46+296-1F, September 1982. $10.00.	NTIS No. PB 83220509
12. Evaluation of an End Treatment for Heavy-Post Median Barriers, FHWA/NY/RR-83-003, April 1983. $10.00.	NTIS No. PB 84107309
13. Traffic Control Devices Handbook, September 1983. $20.00.	[3], [4]
14. A Procedure for Determining Frequencies for Inspection and Repair of Highway Safety Hardware, FHWA-IP-83-2, December 1983. No cost. Supply limited.*	HRT-20,[5] Future GPO and NTIS
15. Rail-Highway Crossing Resource Allocation Procedure — User's Guide, FHWA-IP-82-7, December 1982. No cost. Supply limited.*	HRT-20 (FRA, RRS-12)[6]
16. Compilation of State Laws and Regulations on Matters Affecting Rail - Highway Crossing, FHWA-IP-83-203, April 1983. No cost. Supply limited.*	HRT-20 (FRA, RRS-12) Future GPO and NTIS
17. Evaluation of Snowplowable Markers, FHWA-TS-82-222, October 1982. $8.50.	HRT-10, NTIS No. PB 831872229
18. Develop a Low-Cost Raised Pavement Marker from EPOFLEX, FHWA-RD-82/502, November 1982. No cost. Supply limited.*	HRT-10, Future NTIS
19. Post Mounted Delineators, FHWA-TS-83-208, August 1983. Available soon at no cost.*	Future HRT-10
20. Rapid Set Epoxy Adhesive for Pavement Markers, FHWA-TS-82-209, August 1983. No cost. supply limited.*	HRT-10
21. Roadway Lighting Handbook — 1983 Addendum, September 1983. No cost. Supply limited.*	HRD-11[5]
22. Access Management for Streets and Highways, FHWA-IP-82-3, June 1982. $19.00	NTIS No. PB 83107318
23. High Occupancy Vehicle Facility Development, Operation, and Enforcement, FHWA-IP-82-1, April 1982. (Vols. I and II). $22.00	NTIS No. PB 83126151

NOTE: Numbered items with an asterisk can be obtained free of charge. Supplies are limited.
[1]NTIS (National Technical Information Service), 5285 Port Royal Road, Springfield, Virginia 22161.
[2]Cost for paper copy of publication.
[3]GPO (Superintendent of Documents, U.S. Government Printing Office) Washington, D.C. 20402.
[4]Institute of Transportation Engineers, 525 School Street, S.W., Washington, D.C. 20024.
[5]Federal Highway Administration, Washington, D.C. 20590.
[6]Federal Railroad Administration, Washington, D.C. 20590.

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Appendix F

Major Research Projects Performed for NHTSA
under Contracts Which Utilized FY 1983 Funds

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Table F-1

CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
ADP-80-366	WILSON HILL	TIMESHARING SUPPORT	01/17/80	09/30/80	87000	0	0	0
ADP-82-512	MCDONNELL DOUGLAS (MCAUTO)	TIMESHARING SUPPORT	11/19/81	09/30/81	0	0	50000	0
ADP-82-512	ADP NETWORK SERVICES, INC.	TIMESHARING SUPPORT	10/16/81	09/30/82	0	0	152000	0
ADP-82-513	INFORMATICS, INC	TIMESHARING SUPPORT	11/19/81	09/30/82	0	343000	2324253	0
ADP-82-517	GENERAL ELECTRIC	TIME SHARING (GE)	11/27/81	09/30/82	0	0	45000	0
ADP-82-518	INFORMATICS	PROCURE COMPUTER TIME	03/30/82	09/30/82	0	0	26000	0
ADP-82-531	NATIONAL INSTITUTE OF HEALTH	TIMESHARING SUPPORT	11/19/81	09/30/82	0	0	129675	0
ADP-83-636	INFORMATICS, INC	TIMESHARING CONTRACT FOR THE NATIONAL CENTER FOR STATISTICS AND ANALYSIS	10/31/82	09/30/83	0	0	0	1815000
ADP-83-638	NATIONAL INSTITUTE OF HEALTH	TIMESHARING FOR THE NATIONAL CENTER FOR STATISTICS AND ANALYSIS	10/31/82	09/30/83	0	0	0	259000
ADP-83-639	MCAUTO	DATA PROCESSING AND SOFTWARE SUPPORT	01/17/83	09/30/83	0	0	0	40000
ADP-83-640	MCDONNEL DOUGLAS AUTOMATION COMPANY	ADP SUPPORT (MCAUTO)	01/17/83	09/30/83	0	0	0	50000
ADP-83-643	GENERAL ELECTRIC	GE TIMESHARING FOR NRD-10	01/17/83	09/30/83	0	0	0	45000
ADP-83-675	U.S. DOT - WORKING CAPITAL FUND	PAYMENT OF NHTSA ADMINISTRATIVE CHARGES FOR WORKING CAPITAL FUND - TIMESHARING	08/12/83	09/30/83	0	0	0	180000

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DOT HS-5-01160	UNIVERSITY OF SOUTHERN CALIFORNIA	MOTORCYCLE FATAL ACCIDENT STUDY	08/31/75	12/31/82	0	0	50000	0
DOT HS-5-01179	CALSPAN FIELD SERVICES	STUDY OF DRIVER BEHAVIOR ERRORS IN ALCOHOL/DRUGS	08/01/75	03/31/82	186303	79806	0	0
DOT HS-6-01286	UNIVERSITY OF MICHIGAN	FLEET ACCIDENT EVALUATION OF FMVSS121	09/30/80	12/31/81	43415	0	0	0
DOT HS-6-01331	WRIGHT PATERSON AF BASE	CRASH VICTIM SIMULATOR DATA	03/01/76	12/31/80	31733	0	0	0
DOT HS-6-01389	UNIVERSITY OF MICHIGAN	NATIONAL CRASH SEVERIITY STUDY	05/15/76	04/30/81	30000	0	0	0
DOT HS-6-01393	UNIVERSITY OF MICHIGAN-HSRI	NATIONAL CRASHWORTHINESS SEVERITY TEST	09/30/76	01/30/83	55645	22000	14000	0
DOT HS-6-01442	CALSPAN FIELD SERVICES, INC.	NCSS QUALITY CONTROL	01/27/80	09/30/83	135258	41938	24432	0
DOT HS-7-01551	CALSPAN CORP	RESEARCH SAFETY VEHICLE-PHASE III	12/12/79	12/31/83	100500	0	0	0
DOT-HS-7-01552	MINICARS INC.	RESEARCH SAFETY VEHICLE-PHASE III	09/29/80	12/31/83	1956334	0	0	0
DOT-HS-7-01579	CALSPAN FIELD SERVICES, INC.	PEEDESTRIAN INJURY CAUSATION PARAMETERS	08/14/81	04/30/83	32824	22754	0	0
DOT-HS-7-01588	BUDD COMPANY	LIGHTWEIGHT SUBCOMPACT	04/24/80	11/30/82	578232	0	0	0
DOT-HS-7-01617	MAN FACTORS, INC.	DEVELOPMENT OF SPECS FOR PASSIVE BELT RESTRAINTS	06/15/81	05/31/82	27110	3570	0	0
DOT-HS-7-01643	AUTOMATED SCIENCES GROUP	STATISTICAL/ANALYTIC AL METHODS IN VEHICLE STRESS RESEARCH-II	10/01/77	09/30/82	172555	0	0	0
DOT-HS-7-01647	NAVAL BIODYNAMICS LAB	KINEMATIC/KINETIC CHARACTERIZATION	07/09/77	06/30/82	58000	0	0	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DOT-HS-7-01661	GEORGETOWN UNIVERSITY	ANATOMICAL CROSS-SECTIONAL GEOM-MASS DISTRIBUTION FOR CHILDREN	12/27/77	11/15/82	42950	0	0	0
DOT-HS-7-01697	NATIONAL BUREAU OF STANDARDS	MODEL SPECIFICATIONS AND TESTING FOR SPEED MEASURING DEVICES - TIME EXT.	09/29/77	06/30/85	37500	0	37500	0
DOT-HS-7-01708	AUTOMATED SCIENCES GROUP	ANALYTICAL SUPPORT FOR AUTOMOTIVE FUEL ECONOMY RESEARCH	01/15/77	12/31/82	209879	0	0	0
DOT-HS-7-01721	VECTOR ENTERPRISES INC.	REAR VIEW MIRROR SYSTEMS	08/15/77	11/15/81	29563	0	0	0
DOT-HS-7-01736	OPINION RESEARCH CORPORATION	SAFETY BELT USAGE IN THE TRAFFIC POPULATION	06/06/80	05/31/81	39166	0	0	0
DOT-HS-7-01741	SOUTHWEST RESEARCH INSTITUTE	PSU FOR NASS	11/10/76	09/30/80	29723	0	0	0
DOT-HS-7-01766	NATIONAL PUBLIC SERVICES RESEARCH INSTIT	DRIVER IMPROVEMENT SYSTEM FOR TRAFFIC VIOLATORS AND ACCIDENT REPEATERS	05/28/77	12/31/81	40000	0	0	0
DOT-HS-7-01773	NEW MEXICO STATE UNIV	RESPONSE OF HUMAN SURROGATES IN SIDE IMPACT	06/30/77	10/30/82	88150	0	0	0
DOT-HS-7-01781	MARKET FACTS, INC.	CONSUMER BEHAVIOR TOWARDS FUEL EFFICIENT VEHICLES	02/26/77	02/25/81	51144	0	0	0
DOT-HS-7-01782	NATIONAL ANALYSIS	CORPORATE STRATEGIES OF AUTOMOTIVE MANUFACTURERS	05/15/77	08/15/81	31919	2448	0	0
DOT-HS-8-01889	MINICARS, INC.	RESEARCH SAFETY VEHICLE	06/30/78	05/31/82	336865	0	0	0
DOT-HS-8-01933	DYNAMIC SCIENCE, INC.	SIDE IMPACTOR-DEVELOPMENT OF TEST DEVICE AND TEST PROCEDURE (TIME EXT-07/01/83	09/30/78	08/31/83	3714	0	49366	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DOT-HS-8-01933	DYNAMIC SCIENCE, INC.	DEVELOP TEST DEVICE AND PROCEDURES TO ASSESS VEHICLE SIDE STRUCTURES	12/04/80	12/31/82	0	128438	0	0
DOT-HS-8-01935	MBA RESEARCH CORP.	ANALYSIS IN SUPPORT OF 400 SERIES ROLLOVER STANDARD	03/22/78	03/21/82	53190	10909	0	0
DOT-HS-8-01938	CALSPAN CORP.	DYNAMIC STATIC CRASH TEST SUPPORT	04/13/78	04/12/82	136380	19068	0	0
DOT-HS-8-01941	MINICARS INC.	DYNAMIC STATIC CRASH TEST SUPPORT	04/13/78	04/12/82	138274	0	0	0
DOT-HS-8-01942	DYNAMIC SCIENCE, INC.	LIGHT TRUCK/VAN PARAMETER STUDY	05/15/78	05/14/81	202729	0	0	0
DOT-HS-8-01944	MICHIGAN, UNIVERSITY OF	MATH MODEL FOR NASS	04/09/78	04/08/81	68100	0	0	0
DOT-HS-8-01950	WESTERN WASHINGTON UNIVERSITY	TWO PASSENGER INTEGRATED RESEARCH VEHICLE	11/05/78	01/31/82	0	30597	0	0
DOT-HS-8-01970	SOUTHERN CALIFORNIA RESEARCH INSTITUTE	DEVELOPMENT AND FIELD TESTS OF PSYCHOPHYSICAL TESTS FOR DWI ARREST	01/25/83	05/30/83	43421	0	0	11582
DOT-HS-8-01979	NAT BUREAU OF STANDARDS, BOULDER, COLO.	FMVSS208 ELECTRONCS ANALYSIS-PASSIVE RESTRAINTS	01/29/78	12/31/82	80000	80000	0	0
DOT-HS-8-01992	AUTOMATED SCIENCES GROUP, INC.	DATA MANAGEMENT FACTBOOK	07/31/78	01/30/80	86582	0	0	0
DOT-HS-8-02025	KINETIC RESEARCH	FARS DATA ENHANCEMENT	05/29/78	09/30/81	31585	0	0	0
DOT-HS-8-02026	CALSPAN FIELD SERVICES, INC.	COLLISION DEFORMATION CLASSIFICATION TRAINING PROGRAM	01/15/78	03/31/83	31594	0	0	0
DOT-HS-8-02030	MIDWEST RESEARCH INSTITUTE	TECHNOLOGY ADVANCEMENT FOR DETERRENCE OPF SPEEDING	03/28/78	03/27/81	124850	0	0	0

CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DOT-HS-8-02031	UNIVERSITY OF MICHIGAN	PROBLEM BEHAVIOR RESEARCH	12/02/78	12/31/82	75430	0	1300	0
DOT-HS-8-02045	CALSPAN CORPORATION	DYNAMIC STATIC CRASH TEST SUPPORT	09/02/78	10/01/82	38151	0	0	0
DOT HS-8-02052	SYSTEMS TECHNOLOGY, INC.	FIELD TEST DRUCK DRIVER WARNING SYSTEM	10/31/78	12/31/83	42079	82188	23994	0
DOT HS-8-02064	PABON, SIMS AND SMITH	DEVELOPMENT/REVIEW OF DRIVER TRAINING RESEARCH NEEDS	06/30/78	03/16/81	29795	0	0	0
DOT-HS-9-02071	INFORMATICS, INC	NCSA STATISTICAL DATA SYSTEMS	05/06/79	04/30/81	204942	0	0	0
DOT HS-9-02075	NATIONAL PUBLIC SERVICES RESEARCH INST.	ELDERLY DRIVER RETRAINING	08/31/79	12/31/82	47000	0	0	0
DOT HS-9-02079	TRANSPORTATION RESEARCH CENTER OF OHIO	LEASE OF FACILITIES FROM TRC OF OHIO	10/01/79	11/30/83	181087	235280	271756	0
DOT HS-9-02081	TRANSPORTATION ADVISORS, INC.	COMMERCIAL VEHICLE FUEL ECONOMY TEST/ADVISORY SERVICES	12/01/79	05/30/83	125985	0	0	0
DOT-HS-9-02085	CALSPAN FIELD SERVICES	COUNTERMEASURES FOR SPECIFIC ALCOHOL ACCIDENT TYPES AND PROBLEMS	01/10/83	09/30/83	0	63000	121395	9670
DOT-HS-9-02090	APPLIED SCIENCE ASSOCIATES	EDUCATIONAL MATERIALS TO PROMOTE VOLUNTARY USE OF MOTOR CYCLE HELMETS	09/30/79	12/31/81	0	57048	0	0
DOT-HS-9-02095	DYNAMIC SCIENCE, INC.	SYSTEMS ENGINEERING STUDIES	03/12/79	12/31/81	399335	50000	0	0
DOT-HS-9-02096	MINICARS, INC.	SYSTEMS ENGINEERING STUDIES	02/19/80	12/31/81	461065	80956	0	0
DOT-HS-9-02098	ENSCO, INC.	SYSTEMS ENGINEERING STUDIES	03/15/79	12/31/81	36298	0	0	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DOT-HS-9-02101	NY DEPARTMENT OF MOTOR VEHICLES	R&D MOTOR VEHICLE SAFETY PROGRAM REVIEW	09/30/79	12/31/81	96000	0	0	0
DOT-HS-9-02111	SOUTH COAST TECHNOLOGY	AUTOMOTIVE FUEL CONSERVATION TECHNOLOGY	02/26/79	09/30/82	269894	0	0	0
DOT HS-9-02112	IIT RESEARCH INDUSTRIES	EVALUATION OF AUTOMOTIVE FUEL CONSERVATION TECHNIQUES	12/18/78	11/30/82	126334	0	0	0
DOT HS-9-02128	WESTAT, INC.	NASS NON REPORTED ACCIDENT SURVEY	01/15/79	12/31/82	190000	178664	0	0
DOT-HS-9-02131	SYSTEMS TECHNOLOGY	TIRE MIX PERFORMANCE INSPECTION	10/31/78	12/31/80	34107	0	0	0
DOT-HS-9-02141	NEBRASKA DEPT OF MOTOR VEHICLES	FIELD TEST OF DRIVER MANUALS	04/15/79	12/31/82	27674	0	0	0
DOT-HS-9-02177	DYNAMIC SCIENCE, INC.	COUNTERMEASURES FOR SITE IMPACT STUDY	04/04/79	11/30/82	0	0	39446	0
DOT-HS-9-02178	MINICARS, INC.	EXALUATE VOLVO ACRS SYSTEM	03/15/79	09/30/81	155295	0	0	0
DOT-HS-9-02191	NEW YORK DMV	MOTORIZED BICYCLE ACCIDENT PROBLEM	12/11/78	12/31/81	0	100312	0	0
DOT-HS-9-02204	AUTOMATED MANAGEMENT SYSTEMS, INC.	DEVELOPMENT OF NASS MANAGEMENT INFORMATION SYSTEM	10/01/79	09/30/80	31123	0	0	0
DOT-HS-9-02215	CALSPAN CORPORATION	EVALUATION OF PASSIVE RESTRAINT SYSTEM	03/21/79	09/30/81	136672	0	0	0
DOT-HS-9-02222IA	US ENVIRONMENTAL PROTECTION AGENCY	IMPLICATION OF DIESEL ENGINES IN FUTURE LIGHT DUTY VEHICLES	04/04/79	12/31/82	234250	51250	0	0
DOT-HS-9-02231	MANAGEMENT ENGINEERS, INC.	MOTOR VEHICLE ACCIDENT INVESTIGATION RESEARCH STUDY FOR WASHINGTON, DC	10/01/78	09/15/83	122000	136000	30369	122531

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DOT-HS-9-02232	CALSPAN FIELD SERVICES, INC.	OPERATION OF ZONE CENTER 'B' FOR NABS	10/01/78	09/30/83	344000	410000	544318	0
DOT-HS-9-02233	INDIANA UNIVERSITY FOUNDATION	OPERATION OF ZONE CENTER 'A' FOR NABS	10/01/78	09/30/83	44000	328000	433486	50000
DOT-HS-9-02239	UNIVERSITY OF MICHIGAN (TRI)	RETARDERS FOR HDV'S - EVALUATION OF PERFORMANCE CHARACTERISTICS & IN-SERVICE COS	12/10/78	06/30/83	180000	0	0	0
DOT-HS-9-02260	ALLEN CORP. OF AMERICA	BASIC TRAINING PROGRAM FOR NABS	03/19/79	09/30/82	120000	67983	0	0
DOT HS-9-02273	NATL TECH SYSTEMS(AETL)	DATA COLLECTION SEAT BELTS$10327.04;AETL	01/06/79	12/31/83	55706	14102	53505	0
DOT HS-9-02274	DYNAMIC SCIENCE	FRONTAL INDICANT TESTING-NCAP-PIGGY BACK TEST ON NEW CAR ASSESSMENT PROGRAM	01/16/81	09/30/83	47937	3970	42766	2480
DOT HS-9-02284	NATIONAL PUBLIC SERVICES RESEARCH INST.	SUPPLEMENTAL DRIVER SAFETY PROGRAM DEVELOPMENT - TIME EXT TO 02/28/83	04/30/79	02/28/83	94537	0	64993	0
DOT-HS-9-02304	UNIVERSITY OF MICHIGAN-HSRI	IMPROVED LOW BEAM PHOTOMETRICS	08/15/79	08/14/81	83625	31850	0	0
DOT-HS-9-02309	SYSTEMS TECHNOLOGY, INC.	EVALUATION OF ELECTRIC/HYBRID VEHICLES FOR HANDLING/STABILITY	06/11/79	09/30/81	48512	0	0	0
DOT-HS-9-02314	UNIVERSITY OF MICHIGAN	MOTORCYCLE BRAKE TEST PROCEDURES-EQUIPMENT UPGRADE	07/27/79	12/31/82	28650	0	3550	0
DTHN22-80A-07012	OHIO STATE UNIVERSITY	BASIC ORDERING AGREEMENT FOR RESEARCH AND TESTING	10/01/79	09/30/85	30312	0	0	0
DTNH22-80A-07046	US NAT INST ON ALCOHOL ABUSE & ALCOHOLIS	INTERAGENCY W/ NIAAA	03/28/80	09/30/83	165000	0	0	0

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DTNH22-80A-07211	UNIVERSITY OF VIRGINIA	REFINEMENTS TO SAFETY SYSTEMS OPTIMIZATION MODEL	04/11/80	04/10/82	100000	0	0	0
DTNH22-80A-07260	CONSUMER PRODUCT SAFETY COMMISSION	NATIONAL ELECTRONIC INJURY SURVEILLANCE SYSTEM	02/04/80	12/31/82	233042	139181	0	0
DTNH22-80A-07507	U.S. NAVAL CIVIL ENG. LAB	HEAD NECK INJURY DATA ANALYSIS REVEIW OF CRASH DATA INVOLVING ROLLOVERS	07/01/80	06/05/81	74500	0	0	0
DTNH22-80A-07587	FHWA	REVEIW IF CRASH DATA INVOLVING ROLLOVERS	06/06/80	06/05/81	36100	0	0	0
DTNH22-80A-07628	HARRY DIAMOND LABORATORIES	DEVELOPMENT OF FLUIDIC ANTILOCK BRAKE SYSTEM FOR MOTORCYCLES	07/25/80	07/24/82	75000	75000	0	0
DTNH22-80C-07001	MIDWEST RESEARCH INSTITUTE	PSU'S FOR NASS ST.LOUIS P03	04/25/80	09/30/83	137000	90000	156700	79382
DTNH22-80C-07002	MIDWEST RESEARCH INSTITUTE	PSU FOR NASS - OMAHA	04/25/80	09/30/83	137000	90000	0	83805
DTNH22-80C-07003	PRC PLANNING & ECONOMICS, INC.	PSU FOR NASS- CONTRA-COSTA	02/25/80	09/30/83	137000	80000	101000	97602
DTNH22-80C-07004	KAPPA SYSTEMS, INC.	PSU FOR NASS BERGEN COUNTY	04/25/80	09/30/83	137000	90000	140700	67343
DTNH22-80C-07005	APPLIED SCIENCES ASSOCIATES	PSU'S FOR NASS GILPIN - P80	01/28/80	09/30/83	0	90000	139200	69776
DTNH22-80C-07006	MICHIGAN OFFICE OF HWY SAFETY PLANNING	PSU FOR NASS GENESSEE	02/03/80	09/30/83	137000	90000	117806	84284
DTNH22-80C-07007	MANAGEMENT ENGINEERS	PSU FOR NASS LACKAWANNA	02/25/80	09/30/83	137000	90000	110000	119995
DTNH22-80C-07008	ALLEN CORPORATION OF AMERICA	PSU'S FOR NASS YUMA - P81	03/03/80	06/05/83	125000	90000	68429	46005

CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-80C-07009	KLD ASSOCIATES	PSU FOR NASS RUTHERFORD	03/03/80	06/05/83	122000	90000	21549	53470
DTNH22-80C-07010	ANALYTIC SYSTEMS, INC.	PSU'S FOR NASS BERRIEN P005	03/03/80	06/05/83	122000	90000	29940	46000
DTNH22-80C-07011	VERVE RESEARCH	COMFORT/CONVENIENCE OF SAFETY BELT SYSTEMS- 1980 VEHICLES	11/26/79	12/31/81	128233	0	0	0
DTNH22-80C-07015	JWK INTERNATIONAL CORPORATION	NASS - WITHIN PSU SAMPLING METHODOLOGY	12/31/79	10/01/83	83033	100396	30068	0
DTNH22-80C-07032	NAT'L INST FOR SAFETY RESEARCH	STUDY THE PROBLEMS OF MULTIPLE LICENSES/RECORDS	06/30/80	12/31/83	188128	82543	0	0
DTNH22-80C-07033	NAT'L INSTITUTE FOR SAFETY RESEARCH	ANALYSIS OF AGE, EXP. AND LIC. STATUS OF HDV OPERATORS	08/12/80	12/31/82	124870	0	0	0
DTNH22-80C-07034	VECTOR ENTERPRISES	IMPROVED COMMERCIAL VEHICLE LIGHTING, MARKING & CONSPICUITY - TIME EXT	06/06/80	10/31/85	288690	0	0	0
DTNH22-80C-07035	KAPPA SYSTEMS, INC.	MAINTENANCE OF NCSA COMPUTER SYSTEMS	06/05/80	09/30/82	197996	355000	95000	0
DTNH22-80C-07042	SOUTHWEST RESEARCH INSTITUTE	NASS ZONE CENTER "C"	03/26/80	12/31/83	344000	320000	275958	1[illegible]4
DTNH22-80C-07043	DYNAMIC SCIENCE	OPERATIONS OF NASS ZONE CENTER "D"	03/26/80	12/31/83	344000	405000	614334	164345
DTNH22-80C-07052	DUNLAP AND ASSOCIATES EAST, INC.	CONSPICUITY FOR PEDESTRIANS AND BICYCLISTS	11/01/79	11/25/83	223061	0	0	0
DTNH22-80C-07053	AUTOMATED SCIENCES GROUP, INC.	THE EFFECTS OF FATIGUE AND ALCOHOL ON HIGHWAY	01/08/80	09/30/82	63815	270692	0	0
DTNH22-80C-07054	MCR TECHNOLOGY, INC.	EVALUATION OF CONTROLS STANDARDIZATION	05/30/80	07/31/83	144055	0	0	11537

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DTNH22-80C-07062	MINICARS, INC., KINETIC RESEARCH DIVISION	BOA FOR ANALYTICAL SUPPORT	10/01/79	09/30/82	50000	200000	0	0
DTNH22-80C-07064	SOUTHWEST RESEARCH INSTITUTE	ON-SITE FIELD SUPPORT OF TRANSIT BUS BRAKE DEMONSTRATION PROGRAM TIME TO 6/30/83	07/01/80	06/30/83	243349	0	0	0
DTNH22-80C-07065	MGA RESEARCH, INC.	SUPPLEMENTAL NASS RECONSTRUCTION	01/11/80	12/31/82	51531	81515	0	0
DTNH22-80C-07072	JOHN Z. DELOREAN	PRELIMINARY CRM CRASHWORTHINESS EVALUATION	03/14/80	03/13/82	1110370	0	0	0
DTNH22-80C-07082	KLD ASSOCIATES	EVALUATION OF DRIVER/VEHICLE EFFECTIVENESS MODEL	03/28/80	09/30/82	68278	33118	0	0
DTNH22-80C-07087	KENDRICK & COMPANY	EDITING AND DISTRIBUTION OF CONFERENCE PAPERS	10/25/79	03/31/80	33408	0	0	0
DTNH22-80C-07088	SHERATON NATIONAL HOTEL	PAYMENT OF TRANSLATION COSTS FOR CONFERENCE	10/26/79	12/31/79	43000	0	0	0
DTNH22-80C-07093	ARVIN/CALSPAN ADVANCED TECHNOLOGY CENTER	TRUCK TIRE TRACTION - TIME EXT TO 03/31/83	06/20/80	03/31/83	380600	0	0	0
DTNH22-80C-07110	WILSON HILL ASSOCIATES	CRASH MAINTENANCE DEVELOPMENT	02/20/80	12/31/81	43135	43647	0	0
DTNH22-80C-07113	DYNAMIC SCIENCE	SPECIAL DUMMY THORAXES FOR SIDE IMPACT	11/30/79	12/31/81	141371	177268	0	0
DTNH22-80C-07118	SMITHERS TRANSPORTATION RESEARCH, INC.	UTQGS TREADWEAR VERIFICATION	09/30/80	09/30/82	50960	0	0	0
DTNH22-80C-07131	MARKET FACTS, INC.	ADS AND MARKET INCENTIVES TO INCREASE SALES OF FUEL EFFICIENT VEHICLES	05/23/80	05/22/82	23000	54844	0	0

CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-80C-07155	CHI ASSOCIATES	REFINEMENT OF THE WRECKER COM. PROGRAM	05/30/80	05/29/82	78707	10000	0	0
DTNH22-80C-07156	ALDERSON RESEARCH LAB	PROCUREMENT OF THREE CHILD DUMMIES	12/10/79	03/28/80	28860	0	0	0
DTNH22-80C-07165	SOUTHWEST RESEARCH INSTITUTE	CRASH INJURY SUSCEPTIBILITY OF CHILDREN COMPARED TO CHILD SURROGATES	03/31/80	03/31/83	602203	0	0	55401
DTNH22-80C-07167	KETRON, INC.	IMPROVED CONSPICUITY TO THE SIDES OF MOTORCYCLES/MOPEDS	00/13/80	12/31/82	159549	0	10695	0
DTNH22-80C-07179	BUDD CORPORATION	VAN FRONTAL AGGRESSITIVITY MODIFICATIONS	03/03/80	03/06/82	126832	36500	0	0
DTNH22-80C-07189	UNIVERSITY OF NORTH CAROLINA	IMPACT OF RECENT CHANGES IN THE HIGHWAY SAFETY ENVIRONMENT	04/18/80	04/17/82	37268	18558	0	0
DTNH22-80C-07217	AUTOMATED SCIENCES GROUP, INC.	SOFTWARE SUPPORT FOR R&D ACTIVITIES	09/30/80	12/31/82	39909	158839	0	0
DTNH22-80C-07231	ANALYTIC SYSTEMS	PSU'S FOR NASS LAKE - P06	09/18/80	06/05/83	60000	152700	147000	14315
DTNH22-80C-07232	KLD ASSOCIATES	PSU FOR NASS-SCHENECTADY	09/10/80	06/05/83	60000	152660	60000	110[illegible]
DTNH22-80C-07233	THE FRANKLIN INSTITUTE	PSU'S FOR NASS PHILADELPHIA - P31	09/18/80	06/05/83	60000	152660	137300	162640
DTNH22-80C-07234	CALSPAN FIELD SERVICES	PSU FOR NASS ALLEGHENY	09/18/80	06/05/83	60000	152660	102000	84353
DTNH22-80C-07235	ANALYIC SYSTEMS	PSU'S FOR NASS BERNALILLO P82	09/18/80	06/05/83	60000	152660	82500	76714
DTNH22-80C-07236	MIDWEST RESEARCH INSTITUTE	ESTABLISHMENT AND OPERATION OF NASS PSU-83 SOUTH DAKOTA	09/10/80	06/05/83	60000	100000	114815	46985
DTNH22-80C-07237	KAPPA SYSTEMS, INC.	PSU'S FOR NASS SEATTLE P85	09/18/80	06/05/83	60000	100000	206000	85806

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DTNH22-80C-07238	ELRICK AND LAVIDGE, INC.	PSU'S FOR NASS SOUTH TEXAS	09/18/80	06/05/83	60000	108000	91087	50577
DTNH22-80C-07239	DYNAMIC SCIENCE, INC.	ESTABLISHMENT AND OPERATION OF PSU'S FOR NASS - KANKAKEE	09/18/80	06/05/83	60000	108000	95106	19378
DTNH22-80C-07240	ALABAMA TRAFFIC SAFETY CENTER	PSU FOR NASS TUSCALOOSA	09/18/80	06/05/83	60000	152657	105000	63000
DTNH22-80C-07241	J.A.REYES ASSOIATES, INC.	PSU FOR NASS CHICAGO	09/18/80	06/05/83	236000	167000	0	75181
DTNH22-80C-07242	KAPPA SYSTEMS	PSU'S FOR NASS FT LAUDERDALE P051	09/18/80	06/05/83	40000	185000	185000	86515
DTNH22-80C-07243	FRANKLIN INSTITUTE	PSU'S FOR NASS DELAWARE COUNTY P028	09/18/80	06/05/83	40000	120000	105400	[illegible]
DTNH22-80C-07244	SOUTHWEST RESEARCH INSTITUTE	PSU FOR NASS DALLAS COUNTY	09/18/80	06/05/83	40000	167000	136400	73739
DTNH22-80C-07245	ALABAMA TRAFFIC SAFETY CENTER	PSU'S FOR NASS SHELBY COUNTY, ALABAMA P052	09/18/80	06/05/83	40000	185000	102000	110000
DTNH22-80C-07246	MANAGEMENT ENGINEERS, INC.	PSU'S FOR NASS ERIE P027	09/18/80	06/05/83	40000	120000	31760	[illegible]
DTNH22-80C-07247	MICHIGAN OFFICE OF HWY SAFETY PLANNING	PSU'S FOR NASS MUSKEGON P02	09/18/80	06/05/83	40000	167000	86653	[illegible]
DTNH22-80C-07248	KLD ASSOCIATES	PSU'S FOR NASS ULSTER P026	02/19/82	06/05/83	40000	167000	86500	[illegible]
DTNH22-80C-07249	TEXAS A&M RESEARCH FOUNDATION	PSU'S FOR NASS ARKANSAS P053	02/19/82	06/05/83	40000	167000	58943	[illegible]
DTNH22-80C-07250	CALSPAN FIELD SERVICES	PSU'S FOR NASS SKAGIT P076	02/19/82	06/05/83	40000	120000	72746	89000
DTNH22-80C 07268	USSBA THE PRISM CORPORATION	CONSUMER ACCEPTANCE OF RSV FEATURES	04/09/80	04/08/81	46859	0	0	0
DTNH22-80C 07278	LAWRENCE JOHNSON AND ASSOCIATES	DEMOGRAPHIC, SITUATIONAL & MOTIVATIONAL FACTORS AFFECTING RESTRAINT USAGE IN AUTO	08/18/80	12/31/82	25000	0	57331	0

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DTNH22-80C-07283	OPINION RESEARCH CORPORATION	SAFETY BELT USE IN THE TRAFFIC POPULATION	08/31/80	04/30/83	250000	9735	49610	14125
DTNH22-80C-07284	CENTER FOR THE ENVIRONMENT AND MAN, INC.	DEVELOPMENT OF A METHODOLOGY FOR SAFETY RESEARCH	09/25/80	06/01/83	130000	117555	0	0
DTNH22-80C-07307	SYSTEMS TECHNOLOGY, INC.	HEAVY DUTY VEHICLE SPLASH AND SPRAY REDUCTION	09/30/80	09/30/82	50000	0	0	0
DTNH22-80C-07325	DUNLAP AND ASSOCIATES	INVESTIGATE ACCIDENT RISK LEVELS FOR HEART ATTACK VICTIMS	08/27/80	09/30/82	132037	0	0	0
DTNH22-80C-07336	NATIONAL PUBLIC SERVICES RESEARCH INST.	KNOWLEDGE AND PERFORMANCE TESTS FOR LICENSING HEAVY VEHICLE OPERATORS-TIME EXT.	08/11/80	05/15/84	380000	0	0	0
DTNH22-80C-07344	MICHIGAN, UNIVERSITY OF	PARAMETRIC ANALYSIS OF HEAVY TRUCK DYNAMIC STABILITY	09/30/80	12/31/82	100000	0	0	0
DTNH22-80C-07359	CHI ASSOCIATES	NCSA DATA SYSTEM MAINTENANCE	09/11/80	09/30/81	73802	0	0	0
DTNH22-80C-07360	ABT ASSOCIATES, INC.	YOUNG DRIVER RISK TAKING	09/30/80	12/31/82	169130	0	0	0
DTNH22-80C-07394	APPLIED SCIENCE ASSOCIATES, INC	ASSESSMENT OF PEDESTIAN AND BICYCLE PROGRAMS	09/30/80	09/30/82	149921	0	0	0
DTNH22-80C-07417	SOUTHWEST RESEARCH INSTITUTE	DEVELOPMENT OF FORMS FOR NASS/FHWA ENVIRONMENTAL DATA COLLECTION	07/28/80	06/30/82	19002	58181	0	0
DTNH22-80C-07420	NAT'L INSTITUTE FOR SAFETY	ANALYSIS OF EFFECTIVENESS OF LICENSE SUSP/REV PROGRAMS	09/26/80	12/31/82	196783	0	0	0
DTNH22-80C-07439	PABON, SIMS, SMITH AND ASSOCIATES	MOTIVATION OF EMPLOYERS TO ENCOURAGE THEIR EMPLOYEES TO USE SAFETY BELTS	09/30/80	06/30/83	50000	19089	79516	6919

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DTNH22-80C-07450	CALSPAN FIELD SERVICES, INC.	STEERING COLUMN SPECIAL STUDY--DATA ANALYSIS	07/30/80	07/30/81	55672	0	0	0
DTNH22-80C-07455	CHI ASSOCIATES, INC.	IMPAIRMENT SCALING FROM THE ABBREVIATED INJURY SCALES	06/30/80	01/31/84	0	3975	105714	121927
DTNH22-80C-07457	CALSPAN FIELD SERVICES, INC.	STUDY OF HEAVY TRUCK OCCUPANT CRASH PROTECTION	09/30/80	06/30/82	200000	17074	0	0
DTNH22-80C-07475	DUNLAP & ASSOCIATES	DEVELOPMENT AND TEST OF URBAN/RURAL PEDESTRIAN SAFETY MESSAGES	09/30/80	12/31/82	367854	0	0	0
DTNH22-80C-07484	HEXCEL CORPORATION	FABRICATION OF ENERGY ABSORBING HONEYCOMB ASSEMBLIES	03/11/80	12/31/80	48750	0	0	0
DTNH22-80C-07502	UNIVERSITY OF MICHIGAN (UMTRI)	ADVANCED DUMMY ANTHROPOMETRY TIME EXT.	02/26/80	12/31/83	200000	0	30640	16043
DTNH22-80C-07515	WESTAT, INC.	NATIONAL EXPOSURE DATA SYSTEM PHASE I AND II	09/23/80	12/31/81	130713	11622	0	0
DTNH22-80C-07518	THE PRISM CORP.	PRODUCTION OF RSV FILM	05/10/80	12/31/81	30443	2561	0	0
DTNH22-80C-07530	MINICARS, INC.	COLLISION AVOIDANCE SYSTEM-- COST BENEFIT ANALYSIS	09/29/80	09/30/82	50000	101948	0	0
DTNH22-80C-07531	CALSPAN CORP., N.Y.	RSV PHASE IV	06/23/80	06/30/82	128827	0	0	0
DTNH22-80C-07537	CALSPAN CORPORATION	HEAVY TRUCK CRASH TESTS	07/21/80	12/31/80	59975	0	0	0
DTNH22-80C-07539	CHI ASSOCIATES	PEDESTRIAN IMPAIRMENT PILOT STUDY-BIOMECHANICS/PEDESTRIAN	02/16/82	02/15/83	93862	0	28594	0
DTNH22-80C-07557	SYSTEMS TECHNOLOGY, INC.	STABILITY OF VEHICLE COMBINATIONS UNDER CROSSWIND AND DUST	09/26/80	12/31/82	50000	100000	0	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-80C-07561	WESTAT, INC.	NASS ESTIMATION PROCEDURES	08/01/80	09/30/82	50000	50000	94845	0
DTNH22-80C-07565	DECISION SCIENCE CONSORTIUM	BEHAVIORAL TESTS TO DETECT IMPAIRMENT	09/29/80	12/31/81	67766	0	0	0
DTNH22-80C-07568	DUNLAP AND ASSOCIATES EAST, INC.	DEVELOP AND TEST RURAL PED SAFETY REGULATIONS	09/22/80	04/30/83	144376	0	0	0
DTNH22-80C-07569		STEERING ASSEMBLY EVALUATION AND IMPROVEMENT STUDY	09/05/80	09/30/82	192680	0	0	0
DTNH22-80C-07591	R.L. POLK AND CO.	VINA SYSTEM AND MAKE BY MODEL REPORT	09/22/80	12/31/80	98925	0	0	0
DTNH22-80C-07601	NATIONAL ACADEMY OF SCIENCES TRB	TRB SUPPORT FOR NHTSA	10/01/79	09/30/81	76000	9000	0	0
DTNH22-80C-07609	FAILURE ANALYSIS ASSOCIATES	RELIABILITY STUDY FOR AUTOMATIC BELT SYSTEMS	09/29/80	12/31/82	82844	0	0	0
DTNH22-80C-07611	VERVE RESEARCH CORP.	COMFORT/CONVENIENCE OF BELT SYSTEMS IN 1981 CARS	06/30/80	05/31/82	81675	0	0	0
DTNH22-80C-07622	TEXAS A&M RESEARCH FOUNDATION	MOTORCYCLE BRAKE TEST PROCEDURE VALIDATION - PHASE I	09/30/80	03/11/83	67297	0	0	0
DTNH22-80C-07635	MINICARS, INC.	MINICARS REQUIRED TASKS	09/08/80	09/30/81	59276	0	0	0
DTNH22-80C-17035	INFORMATICS, INC	NCSA MAINTENANCE	10/01/79	09/30/81	84000	130000	0	0
DTNH22-80C-17062	ABT ASSOC., INC.	BOA FOR ANALYTICAL SUPPORT	09/30/80	12/31/82	250000	200000	222000	0
DTNH22-80C-17278	LAWRENCE JOHNSON AND ASSOCIATES	DEMOGRAPHIC SITUATIONAL AND MOTIVATIONAL FACTORS AFFECTING RESTRAINT USE IN AUTO	09/28/80	03/31/83	25000	0	0	24728

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-80C-27835	COMPUTER DATA SYSTEMS	COMPUTER DATA SUPPORT	09/01/80	09/30/82	84000	130885	30000	0
DTNH22-80C-37835	SCIENCE MANAGEMENT	NCSA COMPUTER SUPPORT	09/01/80	09/30/82	83000	90000	30000	0
DTNH22-80F-07229	ALLEN CORPORATION	BASIC TRAINING FOR NASS	06/27/80	12/31/80	47329	0	0	0
DTNH22-80F-07341	DIGITAL EQUIPMENT CORPORATION	PROCUREMENT OF MINICOMPUTER MASS STORAGE EQUIPMENT	08/18/80	12/31/80	33815	0	0	0
DTNH22-80F-07358	INTERFACE INC	PURCHASE 40 0 LOAD CELLS	02/29/80	07/31/80	42180	0	0	0
DTNH22-80F-07409	METRAPLEX CORP.	EXPANSION OF VRTC MULTIPLEXING SYSTEM	03/28/80	09/30/80	70293	0	0	0
DTNH22-80I-07548	AMER SOCIETY OF TESTING MATERIALS	ASTM FUEL EFFICIENT ENGINE OILS DEMO PROGRAM	09/26/80	09/30/80	30000	0	0	0
DTNH22-80P-07127	WEISHTMAN ADVERTISING	PUBLIC SERVICE ADS FOR THE RSV	10/23/79	09/30/80	28000	0	0	0
DTNH22-80P-07359	KAPPA SYSTEMS, INC.	NASS MAINTENANCE	10/01/79	09/30/80	34926	0	0	0
DTNH22-81C-05118	MACRO SYSTEMS, INC.	DWI ENFORCEMENT TRAINING	11/15/80	11/15/83	0	254996	0	10567
DTNH22-81C-07006	MBA RESEARCH CORPORATION, NEW YORK	ANALYTICAL STUDY OF NEW VEHICLE ROLLOVER TEST DEVICE	02/23/81	06/30/82	0	40017	0	0
DTNH22-81C-07009	AUTOMATED SCIENCES GROUP, INC.	ANALYSIS OF CRASH TEST DATA AND VEHICLE STRUCTURES	03/16/81	03/17/82	0	71796	0	0
DTNH22-81C-07053	AUTOMATED SCIENCES GROUP, INC.	VEHICLE STRUCTURES ANALYSIS AND DATA PROCESSING	02/01/82	12/31/83	0	270592	90000	0
DTNH22-81C-07060		FARS STATE CONTRACTS- NEW JERSEY	10/01/80	12/31/82	0	38199	41291	0
DTNH22-81C-07063	STATE OF ILLINOIS	FARS STATE CONTRACT - ILLINOIS	01/01/81	12/31/82	0	69858	75588	41888

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-81C-07064	STATE OF ARKANSAS	FARS STATE CONTRACT - ARKANSAS	01/01/81	12/31/82	0	35886	37962	37000
DTNH22-81C-07065	STATE OF IOWA	FARS STATE CONTRACT - IOWA	01/01/81	12/31/82	0	28319	22886	27000
DTNH22-81C-07066	STATE OF COLORADO	FARS STATE CONTRACT - COLORADO	01/01/81	12/31/82	0	9156	57754	46000
DTNH22-81C-07067	STATE OF ARIZONA	FARS STATE CONTRACT - ARIZONA	01/01/81	12/31/82	0	24036	0	41154
DTNH22-81C-07071	UNIVERSITY OF NORTH CAROLINA	ENFORCEMENT AND PUBLIC INFORMATION FOR THE DETERRENCE OF DWI	12/31/80	12/31/81	0	609000	0	0
DTNH22-81C-07071	UNIVERSITY OF NORTH CAROLINA	ENFORCEMENT AND PI STRATEGIES FOR THE GENERAL DETERRENCE OF DWI	12/31/80	12/31/84	0	750000	143087	195000
DTNH22-81C-07075	ADVANCED TECHNOLOGY, INC.	SUPPORT FOR AUTOMOTIVE SAFETY RESEARCH	08/24/81	12/31/83	0	300000	0	0
DTNH22-81C-07083	UNIVERSITY OF TENNESSEE	FACTORS - CONSUMER USE & ACCEPTANCE OF CHILD RESTRAINT SYSTEMS	04/22/81	12/01/83	0	83339	0	0
DTNH22-81C-07085	MINICARS, INC.	PHASE II MINICARS MIV PROGRAM	12/11/80	12/31/83	0	606818	47997	781789
DTNH22-81C-07086	PORTER, NOVELLI & ASSOC, INC.	IDENTIFY NETWORKS FOR MESSAGES TO INCREASE SEAT BELT USE	02/25/81	12/31/82	0	55246	0	0
DTNH22-81C-07095	CALSPAN FIELD SERVICES, INC.	INDEPTH ACCIDENT INVESTIGATIONS	07/29/83	09/30/84	0	122500	0	15000
DTNH22-81C-07096	PERCEPTRONICS	DEVELOP AND TEST MOTIVATIONAL APPROACHES TO INCREASE SEAT BELT USE	01/23/81	09/30/82	0	49988	0	0
DTNH22-81C-07099	TRAFFIC SAFETY RESEARCH CORPORTATION	PEDESTRIAN ACCIDENT INVESTIGATION - DATA SUPPORT (PAIDS)	02/22/81	12/31/83	0	130913	0	35099

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-81C-07100	CALSPAN, INC.	TIRE PARAMETER MEASUREMENT	01/30/81	12/31/84	0	187619	49592	25169
DTNH22-81C-07104	OPPORTUNITY SYSTEMS, INC.	LEADING CAUSE OF DEATH SOFTWARE	11/20/81	11/19/82	0	31680	1820	0
DTNH22-81C-07108	BATTELLE MEMORIAL INSTITUTE	EXPERIMENTAL EVALUATION OF COMPLIANCE TECHNIQUES FOR PEDESTRIAN PROTECTION	01/12/81	07/01/84	0	381560	0	150000
DTNH22-81C-07113	DYNAMIC SCIENCE	TO #5 SIDE IMPACT TESTING	12/18/80	09/30/83	0	0	436	63512
DTNH22-81C-07205	KAPPA SYSTEMS, INC.	PSU'S FOR NASS - COOK COUNTY - P08	04/25/82	09/30/83	0	49842	154910	245512
DTNH22-81C-07206	KLD ASSOCIATES, INC.	PSU'S FOR NASS - RHODE ISLAND - P39	09/30/81	09/30/84	0	49842	74900	130000
DTNH22-81C-07337	VECTOR ENTERPRISES, INC.	FIELD TEST EVALUATION OF REARVIEW MIRROR SYSTEMS	09/30/81	06/30/85	0	100000	99998	95585
DTNH22-81C-07364	DAO CORPORATION	PSU FOR NASS CHARLES/PG P038	08/20/81	12/31/84	0	49842	113900	125000
DTNH22-81C-07365	NATIONAL CAPITAL SYSTEMS, INC.	PSU FOR NASS MONTGOMERY COUNTY P037	03/31/82	12/31/84	0	49842	113900	183000
DTNH22-81C-07366	UNITED MANAGEMENT SYSTEMS	PSU'S FOR NASS PIMA COUNTY - P087	03/31/82	06/05/83	0	49842	154910	161816
DTNH22-81C-07499	WILSON-HILL ASSOCIATES	CRASH3 PROGRAM MAINTENANCE AND DEVELOPMENT TIME EXT TO 12/31/82	04/25/81	12/31/82	0	50000	53014	0
DTNH22-81C-07518	UNIV. OF MICHIGAN-HSRI	IN-DEPTH INVESTIGATION OF CRASHES INVOLVING CHILDREN--MICHIGAN	09/29/81	09/30/83	0	85965	0	0
DTNH22-81C-07608	STATISTICA, INC.	REVIEW OF MOTORCYCLE EXPOSURE DATA	07/24/81	12/31/82	0	65913	0	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-81C-07617	COMSIS CORPORATION	NATIONAL ACCIDENT SAMPLING SYSTEM (NASS) FILE ANALYSIS 1981	01/29/83	03/31/83	0	90092	41715	42870
DTNH22-81C-17060	STATE OF NEW YORK	FARS STATE CONTRACT - NEW YORK	01/01/81	12/31/82	0	98120	104175	75000
DTNH22-81C-17062	STATE OF FLORIDA	FARS STATE CONTRACT - FLORIDA	01/01/81	12/31/82	0	0	0	52390
DTNH22-81C-17063	STATE OF INDIANA	FARS STATE CONTRACTS - INDIANA	01/01/81	12/31/82	0	35538	46492	29000
DTNH22-81C-17065	STATE OF KANSAS	FARS STATE CONTRACT - KANSAS	01/01/81	12/31/82	0	28319	0	26000
DTNH22-81C-17067	STATE OF CALIFORNIA	FARS STATE CONTRACTS - CALIFORNIA	01/01/81	12/31/82	0	131600	141374	77746
DTNH22-81C-17085	VOLKSVABENWERKS OF AMERICA	PHASE II, VW MID PROGRAM	12/11/80	06/30/83	0	1147095	358700	0
DTNH22-81C-17205	GOODELL-GRIVAS, INC.	PSU'S FOR NASS WAYNE P009	02/17/82	06/05/83	0	49042	104910	169300
DTNH22-81C-17206	KAPPA SYSTEMS, INC.	PSU'S FOR NASS - DADE CO. - P56	09/30/81	09/30/84	0	49042	113900	124000
DTNH22-81C-27059	STATE OF MASSACHUSETTS	FARS STATE CONTRACTS - MASSACHUSETTS	01/01/81	12/31/82	0	68106	37433	37483
DTNH22-81C-27062	STATE OF GEORGIA	FARS STATE CONTRACT - GEORGIA	01/01/81	12/31/82	0	22984	20734	33500
DTNH22-81C-27063	STATE OF MICHIGAN	FARS STATE CONTRACTS - MICHIGAN (CHANGE REGIONAL CTM TO SAMI RICHIE)	01/01/81	12/31/82	0	135296	73846	73956
DTNH22-81C-27064	STATE OF LOUISIANA	FARS STATE CONTRACT- LOUISIANA	01/01/81	12/31/82	0	46852	42592	0
DTNH22-81C-27065	STATE OF MISSOURI	FARS STATE CONTRACT-MISSOURI	01/01/81	12/31/82	0	103411	94431	0
DTNH22-81C-27068	STATE OF OREGON	FARS STATE CONTRACT - OREGON	01/01/81	12/31/82	0	42715	0	26900

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-81C-27113	MCR TECHNOLOGY, INC.	SIDE IMPACT TESTING	12/18/80	09/30/83	0	41290	0	0
DTNH22-81C-27205	KLD ASSOCIATES, INC.	PSU'S FOR NASS WAUKESHA P010	01/19/83	06/05/83	0	49042	72900	125450
DTNH22-81C-27206	KLD ASSOCIATES, INC.	PSU'S FOR NASS - KNOX CO. - P57	09/30/81	09/30/84	0	49042	124910	152900
DTNH22-81C-37061	STATE OF VIRGINIA	FARS STATE CONTRACT - VIRGINIA	01/01/81	12/31/82	0	0	0	26300
DTNH22-81C-37062	STATE OF KENTUCKY	FARS STATE CONTRACT - KENTUCKY	01/01/81	12/31/82	0	0	34923	35700
DTNH22-81C-37063	STATE OF MINNESOTA	FARS STAE CONTRACT- MINNESOTA	01/01/81	12/31/82	0	0	39359	0
DTNH22-81C-37067	STATE OF NEVADA	FARS STATE CONTRACT - NEVADA	01/01/81	12/31/82	0	0	27744	25500
DTNH22-81C-37205	MIDWEST RESEARCH INSTITUTE	PSU'S FOR NASS GREEN P012	03/24/82	06/05/83	0	49042	75900	130000
DTNH22-81C-37206	KIMLEY-HORN RESEARCH INSTITUTE, INC.	PSU FOR NASS WAKE CO P058	01/01/81	06/05/83	0	49042	113900	133000
DTNH22-81C-47063	STATE OF OHIO	FARS STATE CONTRACT - OHIO	01/01/81	12/31/82	0	0	0	34710
DTNH22-81C-47064	STATE OF TEXAS	FARS STATE CONTRACT - TEXAS	01/01/81	12/31/82	0	0	40000	45000
DTNH22-81C-47066	STATE OF UTAH	FARS STATE CONTRACT - UTAH	01/01/81	12/31/82	0	0	36200	36610
DTNH22-81C-47205	STATE OF MICHIGAN	PSU'S FOR NASS WASHTENAW P011	09/30/81	06/05/83	0	49042	109910	173835
DTNH22-81C-47206	ALLEN CORPORATION OF AMERICA	PSU FOR NASS MISSISSIPPI P059	09/30/81	06/05/83	0	49042	113900	110000
DTNH22-81C-57063	STATE OF WISCONSIN	FARS STATE CONTRACT - WISCONSIN	01/01/81	12/31/82	0	0	29004	32600
DTNH22-81C-57066	STATE OF WYOMING	FARS STATE CONTRACT- WYOMING	01/01/81	12/31/82	0	0	28515	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-81C-57205	INDIANA UNIVERSITY	PSU'S FOR NASS BENTON P013	01/01/81	06/05/83	0	49042	97436	136464
DTNH22-81C-57206	SUNBELT RESEARCH CORPORATION	PSU FOR NASS LOUISANNA P060	09/30/81	06/05/83	0	49042	113900	135000
DTNH22-81C-67062	STATE OF SOUTH CAROLINA	FARS STATE CONTRACT - SOUTH CAROLINA	01/01/81	12/31/82	0	0	32783	31900
DTNH22-81C-67205	MIDWEST RESEARCH INSTITUTE	PSU FOR NASS APPANOOSE P014	03/31/82	06/05/83	0	49042	113900	80377
DTNH22-81C-67206	PRC PLANNING AND ECONOMICS, INC.	NASS SITE - P88 - LOS ANGELES CITY - TERMINATION	01/01/81	12/31/82	0	49042	154910	0
DTNH22-81C-77062	STATE OF TENNESSEE	FARS STATE CONTRACT - TENNESSEE	01/01/81	12/31/82	0	0	37193	25000
DTNH22-81C-77205	KLD ASSOCIATES, INC.	PSU FOR NASS KINGS P034	09/30/81	06/05/83	0	49042	154910	45000
DTNH22-81C-77206	DYNAMIC SCIENCE, INC.	PSU FOR NASS - LOS ANGELES COUNTY	01/01/81	12/31/81	0	49042	154910	0
DTNH22-81C-87088	CALSPAN CORPORATION	FMVSS NO. 214 DUMMY SUPPORT TESTING	04/29/81	06/30/84	0	39177	16887	136092
DTNH22-81C-87205	CALSPAN FIELD SERVICES, INC.	PSU'S FOR NASS - BOSTON - P35	09/30/81	09/30/84	0	49042	154910	156000
DTNH22-81C-87206	PRC PLANNING AND ECONOMICS, INC.	PSU FOR NASS DALLAS CITY P086	09/30/81	06/05/83	0	49042	154910	160000
DTNH22-81C-97205	CALSPAN FIELD SERVICE, INC.	PSU'S FOR NASS - BUFFALO - P36	01/01/81	09/30/84	0	49042	109910	130000
DTNH22-81F-07136	ALANTHUS DATA COMMUNICATIONS CORP.	PURCHASE 500 UNITS	05/08/81	09/30/81	0	88350	0	0
DTNH22-81P-07528	LOCAL PURCHASE/SRL-46	PURCHASE FOR COMPUTER SIMULATION MODELS	06/24/81	09/30/81	0	25132	0	0
DTNH22-82A-07046	UNIVERSITY OF MICHIGAN	RESTRAINT SYSTEM RESEARCH, DEVELOPMENT AND TESTING	11/01/81	12/31/82	0	0	55668	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-82A-07327	HARRY DIAMOND LABORATORIES	DEVELOPMENT OF FLUIDIC ANTILOCK BRAKE SYSTEM FOR MOTORCYCLES - PHASE IV	05/15/82	05/31/84	0	0	500000	137000
DTNH22-82A-37046	MGA RESEARCH CORPORATION	RESTRAINT SYSTEM RESEARCH, DEVELOPMENT AND TESTING	02/22/81	12/31/82	0	0	70098	0
DTNH22-82C-05056	TULANE UNIVERSITY	EVALUATION OF THE EFFECTS OF REINSTATEMENT OF MANDATORY HELMET LAW IN LOUISIANA	02/15/83	12/31/83	0	0	0	34234
DTNH22-82C-07001	TRANSPORTATION RESEARCH BD	HIGHWAY SAFETY LITERATURE SEARCH EXPENDITURES-NATL CTR FOR STATS & ANALYSIS	03/22/82	12/31/83	0	0	169341	0
DTNH22-82C-07003	UNIVERSITY OF NORTH CAROLINA, HSRC	STATE AND NATIONAL ACCIDENT SUMMARY FILES	11/13/81	12/31/82	0	0	49649	0
DTNH22-82C-07032	VEHICLE PURCHASE	SIDE IMPACT CITATION PROCUREMENT	12/01/81	11/30/82	0	0	32639	0
DTNH22-82C-07039	NATIONAL ACADEMY OF SCIENCES, TRB	TRB SUPPORT FOR NHTSA RESEARCH AND DEVELOPMENT	01/28/83	12/31/84	0	0	100000	50000
DTNH22-82C-07041	MGA RESEARCH CORPORATION	TEST SITE INSTRUMENTATION STUDY - PHASE II	02/03/82	05/31/83	0	0	172949	31632
DTNH22-82C-07043	AUTOMATED SCIENCES GROUP, INC.	PROCURE ADDITIONAL MANPOWER SUPPORT UNDER ASG SUPPORT CONTRACT	01/06/82	03/31/84	0	0	277518	118575
DTNH22-82C-07045	IIT RESEARCH INSTITUTE	OPTICAL ENGINEERING RES OF NEW & USED AUTOMOTIVE GLAZING	02/03/82	06/30/83	0	0	155302	0
DTNH22-82C-07047	MGA RESEARCH CORPORATION	COMP MODELING OF SIDE IMPACT PENETRATION OF VAR SIZE DUMMIES - CRASH SURVIVABIL	06/15/82	05/14/83	0	0	69210	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-82C-07050	NATIONAL INSTITUTE FOR SAFETY RESEARCH	FARS TRAINING PROGRAM FOR STATE ANALYSIS	06/30/82	12/31/83	0	0	132000	138553
DTNH22-82C-07051	OPPORTUNITY SYSTEMS, INC.	ANALYSIS OF BMCS ACCIDENT DATA FILES	12/18/81	12/31/83	0	0	79312	41256
DTNH22-82C-07052	ALLEN CORPORATION OF AMERICA	EXECUTE NASS BASIC TRAINING CYCLE FOR PHASE IV TEAMS	01/19/82	12/31/83	0	0	219818	47328
DTNH22-82C-07055	POLARIS RESEARCH AND DEVELOPMENT	POTENTIAL EFFECTS OPF EARLY AGE ALCOHOL ABUSE PREV PROGS ON DWI - TIME EXT	08/04/83	10/31/83	0	0	163946	0
DTNH22-82C-07058	COMSIS CORPORATION	ASSESSMENT OF PRE-CRASH SPEED ESTIMATES AND DEVELOPMENT OF SPEED PROTTO 01/31/83	03/18/82	12/31/83	0	0	32114	0
DTNH22-82C-07126	GOODELL GRIVAS, INC.	RESTRAINT SYSTEM USAGE IN THE TRAFFIC POPULATION	01/28/83	12/31/84	0	0	225000	253729
DTNH22-82C-07142	ALDERSON RESEARCH LABORATORIES	PROCUREMENT OF ANTHROPOMOPHIC TEST DEVICE	07/09/82	09/30/82	0	0	42854	0
DTNH22-82C-07166	SOUTHEASTERN MICHIGAN HEALTH ASSOC.	FIELD TEST OF SAFETY BELT MOTIV. TRAINING SEMINAR FOR AUTO DEALERS & PERSONNEL	06/30/82	06/30/83	0	0	48448	0
DTNH22-82C-07186	UNIVERSITY OF PENNSYLVANIA	MECHANISMS OF PRIMARY LESIONS IN HEAD INJURIES	03/29/83	12/31/84	0	0	0	90536
DTNH22-82C-07187	UNIVERSITY OF PENNSYLVANIA	BIOMECHANICS OF HEAD INJURY IN PHYSICAL AND TISSUE MODELS	03/29/83	12/31/84	0	0	0	98649
DTNH22-82C-07237	DYNAMIC SCIENCE, INC.	LOAD CELL BARRIER DATA COLLECTION-1981 NEW CAR ASSESSMENT	05/13/82	12/31/83	0	0	34246	0
DTNH22-82C-07247	WASHINGTON HOSPITAL CENTER	INDEPTH FOLLOW-UP OF LONG TERM CONSEQUENCES OF HEAD AND NECK INJURY	03/07/82	09/30/84	0	0	81389	102262

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-82C-07259	COMSIS CORPORATION	QUALITY CONTROL FOR THE FARS	03/15/82	12/31/83	0	0	56621	885823
DTNH22-82C-07260	SMC-FEDERAL SYSTEMS	ADDITIONAL FUNDING FOR MANPOWER MAINTENANCE (NCSA)	06/25/82	09/30/84	0	0	79500	0
DTNH22-82C-07261	COMPUTER DATA SYSTEMS, INC.	SUPPORT FOR NASS DATA COLLECTIONS	01/15/81	09/30/84	0	0	75000	65000
DTNH22-82C-07262	KAPPA SYSTEMS	SUPPORT FOR NASS DATA COLLECTIONS	01/31/81	09/30/84	0	0	0	145000
DTNH22-82C-07262	KAPPA SYSTEMS, INC.	SUPPORT FOR NASS DATA COLLECTIONS	08/24/82	09/30/84	0	0	130000	0
DTNH22-82C-07263	INFORMATICS	MAINTENANCE OF NCSA COMPUTER SYSTEMS	06/25/82	09/30/83	0	0	38000	104000
DTNH22-82C-07271	PERCEPTRONICS, INC.	PERCEPTION OF RISK APPROACHES DESIGNED TO INCREASE SAFETY BELT USAGE	04/30/82	09/30/83	0	0	175000	78284
DTNH22-82C-07275	INDIANA UNIVERSITY	OPERATIONS OF CENTRAL ZONE CENTER A	09/30/82	12/31/83	0	0	10000	600000
DTNH22-82C-07276	CALSPAN FIELD SERVICE, INC.	NASS ZONE CENTER "B" BUFFALO	09/30/82	12/31/83	0	0	10000	650000
DTNH22-82C-07279	PRISM CORPORATION	8TH ANNUAL FARS WORKSHOP	01/01/82	12/31/82	0	0	31319	0
DTNH22-82C-07338	MBA RESEARCH CORPORATION	DEVELOPMENT OF AN AUTOMATED RECONSTRUCTION PROCEDURE	11/16/82	12/31/83	0	0	90868	29850
DTNH22-82C-07357	SOUTHWEST RESEARCH INSTITUTE	NASS/FHWA SPECIAL STUDIES TRAINING	02/15/82	06/15/83	0	0	8000	27181
DTNH22-82C-07358	THE PRISM CORP.	SUPPORT FOR 9TH INTERNATIONAL ESV CONFERENCE	07/01/82	12/31/82	0	0	69999	0
DTNH22-82C-07381	SOUTHWEST RESEARCH INSTITUTE	AN EVALUATION OF THE EFFECT OF TIRE DEFLECTION ON TIRE TREADWEAR	12/15/82	03/03/83	0	0	54942	41181

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-82C-07392	VOLKSWAGEN	BASELINE VEHICLES FOR TESTING (MIV-VW)	07/30/82	09/30/82	0	0	27633	0
DTNH22-82C-07427	AUTOMATED SCIENCES GROUP, INC.	TEST AND MAINTENANCE OF AARD CONTRACT CONTROL SYSTEM (CCMIS)	08/05/82	12/31/83	0	0	95000	54000
DTNH22-82C-17148	DYNAMIC SCIENCE, INC.	BOA-ELECTRIC VEHICLE TESTING---FMVSS 208	02/28/83	12/31/83	0	0	0	39482
DTNH22-82C-21140	MOBILITY SYSTEMS AND EQUIPMENT COMPANY	VEHICLE BARRIER IMPACT TEST PROGRAM	06/17/83	09/30/83	0	0	0	58845
DTNH22-82X-07203	FEDERAL HIGHWAY ADMINISTRATION	DOT/BUREAU OF CENSUS NATIONAL PERSONAL TRANSPORTATION SURVEY	02/18/83	09/30/83	0	0	250000	245000
DTNH22-83A-07296	WRIGHT-PATTERSON AFB, AFAMRL/BBM	VALIDATION OF COMPUTER PREDICTIONS OF DUMMY KINEMATICS DURING ROLLOVER ACCIDENTS	05/17/83	12/31/83	0	0	0	40000
DTNH22-83C-02039	CALSPAN ADVANCED TECHNOLOGY CENTER	TESTING OF CHILD RESTRAINTS FOR USE ON AIRCRAFT FLIGHTS	07/25/83	08/01/84	0	0	0	27100
DTNH22-83C-07001	ROMEO-KOJYO COMPANY, INC.	DRIVER AIR BAG FLEET DEMONSTRATION PROGRAM	06/30/83	09/30/84	0	0	0	457935
DTNH22-83C-07002	SOUTHWEST RESEARCH INSTITUTE	OPERATION OF SOUTHERN ZONE CENTER "C" FOR NASS	04/30/83	04/11/86	0	0	0	450000
DTNH22-83C-07003	DYNAMIC SCIENCE, INC.	OPERATION OF WESTERN ZONE CENTER "D" FOR NASS	04/30/83	04/11/86	0	0	0	450000
DTNH22-83C-07005	UNIVERSITY OF MICHIGAN	DESIGN DEVELOPMENT, TEST AND EVALUATION OF AN ADVANCED ANTHROPOMORPHIC DUMMY	08/09/83	10/19/84	0	0	0	200000

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-83C-07006	TEXAS TEST FLEET, INC.	AN EVALUATION OF VEHICLE FACTORS ON TIRE TREADWEAR	03/16/83	12/31/83	0	0	0	64876
DTNH22-83C-07008	JWK INTERNATIONAL CORPPORATION	ADP SYSTEMS ANALYSIS AND PROGRAMMING SERVICES FOR FARS	02/28/83	02/28/85	0	0	0	110000
DTNH22-83C-07009	COMPUTER DATA SYSTEMS, INC.	ADP SYSTEMS ANALYSIS AND PROGRAMMING SERVICES FOR NASS	02/28/83	02/28/85	0	0	0	170000
DTNH22-83C-07011	CALSPAN CORPORATION	STUDY OF OCCUPANT IMPACT WITH VEHICLE INTERIOR SURFACES	02/28/83	12/31/84	0	0	0	120582
DTNH22-83C-07014	DUNLAP ASSOCIATES EAST, INC.	DETERRENCE VALUE OF TRADITIONAL DWI SANCTIONS	09/30/83	04/30/86	0	0	0	246757
DTNH22-83C-07023	ALLEN CORPORATION OF AMERICA	REPLACEMENT/REFRESHER TRAINING FOR THE NATIONAL ACCIDENT SAMPLING SYSTEM (NASS)	02/15/83	07/01/84	0	0	0	263775
DTNH22-83C-07024	KINTON INCORPORATED	DRIVER'S MANUAL FOR RETARDER EQUIPPED HEAVY DUTY TRUCKS	12/16/82	12/01/83	0	0	0	29117
DTNH22-83C-07049	AMAF, INC.	DATA CONTROL FOR THE FATAL ACCIDENT REPORTING SYSTEM	11/30/82	12/31/83	0	0	0	61394
DTNH22-83C-07095	UNIVERSITY OF MICHIGAN (UMTRI)	EVALUAATION OF EXPERIMENTAL TECHNIQUES IN HEAD INJURY RESEARCH	02/28/84	07/01/85	0	0	0	80000
DTNH22-83C-07116	AUTOMATED SCIENCES GROUP, INC.	OVR DATA CENTER ANALYSIS AND PROCESSING SUPPORT	07/11/83	03/31/84	0	0	0	363115
DTNH22-83C-07139	KLD ASSOCIATES, INC.	PHASE I & II PSU FOR NASS ULSTER/SCHENECTADY	08/24/83	09/30/86	0	0	0	40000
DTNH22-83C-07140	KINLEY-HORN RESEARCH INSTITUTE, INC.	PHASE II PSU ST LOUIS	07/01/83	07/31/86	0	0	0	60000

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-83C-07141	KIMLEY-HORN RESEARCH INSTITUTE, INC.	PSU'S FOR NASS - GENESEE - P04	06/30/83	09/30/84	0	0	0	60000
DTNH22-83C-07142	BOODELL-BRIVAS, INC.	PHASE II PSU BERRIEN	07/01/83	07/31/86	0	0	0	60000
DTNH22-83C-07143	KLD ASSOCIATES, INC.	PSU'S FOR NASS - BERGEN - P29	07/01/83	09/30/84	0	0	0	60000
DTNH22-83C-07144	MANAGEMENT ENGINEERS, INC.	PSU'S FOR NASS - LACKAWANNA - P30	07/01/83	09/30/84	0	0	0	60000
DTNH22-83C-07145	KIMLEY-HORN RESEARCH INSTITUTE, INC.	PHASE II PSU RUTHERFORD	07/01/83	07/31/83	0	0	0	60000
DTNH22-83C-07146	MANAGEMENT ENGINEERS, INC.	PSU'S FOR NASS - OMAHA - P78	07/01/83	09/30/84	0	0	0	60000
DTNH22-83C-07147	KIMLEY-HORN RESEARCH INSTITUTE, INC.	PHASE II PSU COLORADO	07/01/83	07/31/86	0	0	0	60000
DTNH22-83C-07148	UNITED MANAGEMENT SYSTEMS	PHASE II PSU YUMA	07/06/83	07/31/86	0	0	0	60000
DTNH22-83C-07149	KIMLEY-HORN RESEARCH INSTITUTE, INC.	PSU'S FOR NASS - CONTRA COSTA - P79	06/30/83	09/30/84	0	0	0	60000
DTNH22-83C-07150	MANAGEMENT ENGINEERS, INC.	PHASE I & III PSU PHILADELPHIA/DELAWARE	08/24/83	07/31/86	0	0	0	40000
DTNH22-83C-07151	KLD ASSOCIATES, INC.	PHASE I & III PSU NASS PHILADELPHIA/DELAWARE	08/24/83	07/31/86	0	0	0	40000
DTNH22-83C-07154	UNIVERSITY OF MONTEVALLO	PHASE I & III PSU NASS SHELBY/TUSCALOOSA	08/24/83	07/31/86	0	0	0	40000
DTNH22-83C-07159	KAPPA SYSTEMS, INC.	PHASE I & III PSU NASS SKAGIT/SEATTLE	08/24/83	09/30/86	0	0	0	40000
DTNH22-83C-07176	WEBSTER-HEISE CORPORATION	COOPERATIVE AGREEMENT:NHTSA,CHRYSLER AND WEBSTER-HEISE CORPORATION	11/25/83	09/30/83	0	0	0	65450

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-83C-07187	UNIVERSITY OF MICHIGAN	EVALUATION OF THE FACTORS INFLUENCING HEAVY TRUCK DYNAMIC PERFORMANCE	09/30/83	03/31/86	0	0	0	193000
DTNH22-83C-07188	UNIVERSITY OF MICHIGAN-TRI	ANALYSIS OF ACCIDENT RATES OF HEAVY VEHICLES	05/31/83	01/25/85	0	0	0	98995
DTNH22-83C-07243	EBON RESEARCH SYSTEMS	MOTIVATION OF RESTRAINT SYSTEM USAGE AMONG SPECIFIC TARGET GROUPS	09/20/83	04/07/84	0	0	0	79798
DTNH22-83C-07247	COMSIS CORPORATION	NATIONAL ACCIDENT SAMPLING SYSTEM (NASS) FILE ANALYSIS 1982	02/15/83	12/31/83	0	0	0	99977
DTNH22-83C-07254	AUTOMATED SCIENCES GROUP, INC.	BIOMECHANICS DATA BASE MANAGEMENT	06/06/83	06/30/84	0	0	0	89955
DTNH22-83C-07258	CHI ASSOCIATES, INC.	CVS SIMULATIONS	05/31/83	05/20/84	0	0	0	157124
DTNH22-83C-07267	LAWRENCE JOHNSON AND ASSOCIATES	NASS WITHIN PSU SAMPLING METHODOLOGY	09/09/83	09/30/86	0	0	0	145598
DTNH22-83C-07276	TRAFFIC INSTITUTE OF NORTHWESTERN UNIV.	DETERRENCE VALUE OF ALTERNATIVE SANCTIONS FOR DWI	02/28/84	09/30/85	0	0	0	69434
DTNH22-83C-07278	PRISM CORPORATION	9TH ANNUAL FARS WORKSHOP	07/15/83	12/31/83	0	0	0	28560
DTNH22-83C-07281	WESTAT, INC.	NATIONAL ACCIDENT SAMPLING SYSTEM - ESTIMATION	09/28/83	09/30/84	0	0	0	111987
DTNH22-83C-07287	CENTER FOR THE ENVIRONMENT & MAN, INC.	SMALL CAR SAFETY STUDY	02/02/84	02/11/85	0	0	0	100000
DTNH22-83C-07294	CALSPAN FIELD SERVICES, INC.	MOTOR VEHICLE ACCIDENT INVESTIGATION TEAM - WASHINGTON, D.C.	01/13/84	09/30/84	0	0	0	54000

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-83C-07310	CHI ASSOCIATES, INC.	DATA ANALYSIS FOR QUALITY CONTROL	08/25/83	12/31/84	0	0	0	69581
DTNH22-83C-07322	TARRANCE AND ASSOCIATES	IMPACT OF TRAVEL PATTERNS AND DRIVING BEHAVIOR ON CRASH INVOLVEMENT	05/31/83	09/30/83	0	0	0	27500
DTNH22-83C-07323	NAT'L INST OF GOV'T PURCHASING, INC.	PUBLIC SECTOR AIR BAG PURCHASE SUPPORT	04/22/83	04/21/84	0	0	0	49861
DTNH22-83C-07324	ENTRE COMPUTER CENTER	PURCHASE OF SCIENTIFIC MICROCOMPUTER SYSTEM	06/29/83	07/15/83	0	0	0	44253
DTNH22-83C-07334	CARLOW ASSOCIATES, INC.	PHOTOMETRIC TESTS OF DAYTIME RUNNING LIGHTS	09/28/83	01/31/84	0	0	0	44943
DTNH22-83C-07360	UNIVERSITY OF MICHIGAN	MEASUREMENT OF CRASH AVOIDANCE CHARACTERISTICS OF VEHICLES IN USE	09/30/83	09/30/84	0	0	0	191844
DTNH22-83C-07366	OPPORTUNITY SYSTEMS, INC.	TECHNICAL SUPPORT FOR DATA ANALYSIS	06/15/83	12/31/84	0	0	0	32748
DTNH22-83C-07417	MCGINLEY MARKETING RESEARCH COMPANY, INC	DETECTION OF CHANGES IN SAFETY BELT KNOWLEDGE AND ATTITUDES: CARAVAN STUDY	09/11/83	12/30/84	0	0	0	75000
DTNH22-83C-07428	CAMELBACK AMC	VEHICLE PURCHASE FOR FRONTAL IMPACT - (12 @) 1983 RENAULT FUEGO	09/22/83	07/15/83	0	0	0	121683
DTNH22-83C-07429	CARL BURGER DODGE	VEHICLE PURCHASE FOR FRONTAL TESTING - (11 @) 1983 DODGE OMNI	09/22/83	07/15/83	0	0	0	74212
DTNH22-83C-07432	SAND MOTOR COMPANY	VEHICLE PURCHASE FOR FRONTAL TESTING - (7 @) 1983 CHEVROLET CELEBRITY	09/22/83	07/15/83	0	0	0	68844

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTNH22-83C-07452	AUTOMATED SCIENCES GROUP, INC.	ENHANCEMENT AND MAINTENANCE OF THE AARD/CCMIS SYSTEM	09/30/83	09/30/86	0	0	0	349198
DTNH22-83C-07461	VERVE RESEARCH CORPORATION	PRETEST AND REFINEMENT OF ITEMS FOR ALCOHOL HIGHWAY SAFETY SURVEYS	09/30/83	01/31/84	0	0	0	33696
DTNH22-83C-07494	AUTOMATED SCIENCES GROUP, INC.	MAINTENANCE OF BIOMECHANICS DATA BASE	09/28/83	12/31/84	0	0	0	140719
DTNH22-83C-17148	DYNAMIC SCIENCE, INC.	FRONTAL IMPACT CRASH TESTS INVOLVING ALTERNATIVE VEHICLE DESIGNS - PART II	08/17/83	12/31/83	0	0	0	374981
DTNH22-83C-27019	WAYNE STATE UNIVERSITY	THORACIC/ABDOMINAL TRAUMA FROM IMPACT WITH STEERING ASSEMBLY/INSTRUMENT PANEL	09/30/83	03/31/85	0	0	0	287737
DTNH22-83C-27403	ARIZONA DEPARTMENT OF PUBLIC SAFETY	PURCHASE 10 1982 FORD LTD W/POLICE PACKAGE FOR AIR BAG RETROFIT PROGRAM	07/28/83	05/30/83	0	0	0	50042
DTNH22-83C-47019	CALSPAN CORPORATION	THORACIC/ABDOMINAL TRAUMA FROM IMPACT WITH STEERING ASSEMBLY/INSTRUMENT PANEL	09/30/83	03/31/85	0	0	0	60000
DTNH22-83C-67019	UNIVERSITY OF HEIDELBERG	THORACIC/ABDOMINAL TRAUMA FROM IMPACT WITH STEERING ASSEMBLY/INSTRUMENT PANEL	09/30/83	03/31/85	0	0	0	117874
DTNH22-83F-07117	RELATIONAL TECHNOLOGY, INC.	PROCUREMENT OF INGRES DBMS FOR THE VAX 11/780 ***EXPEDITED***	02/25/83	09/30/83	0	0	0	29750
DTNH22-83F-57039	DIGITAL EQUIPMENT CORPORATION (DEC)	OPVR COMPUTER SYSTEM HARDWARE MAINTENANCE	11/04/82	09/30/83	0	0	0	33654

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
DTN422-83X-00004	TRANSPORTATION SYSTEMS CENTER	IA - TSC SMALL BUSINESS INNOVATION RESEARCH PROGRAM (SBIR)	07/18/83	09/30/83	0	0	0	30000
DTN422-83X-07358	FEDERAL HIGHWAY ADMINISTRATION	ROLLOVER CRASH TESTS FOR VALIDATION OF DUMMY KINEMATICS DURING ROLLOVER ACCIDENT	08/19/83	01/31/83	0	0	0	56958
DTN422-83X-07463	MICHIGAN STATE UNIVERSITY	MODELING AND PARTICIPATION: ELEMENTS IN EDUCATION TO REDUCE ALCOHOL-IMPAIRED DRI	09/30/83	09/30/86	0	0	0	92000
DTN422-83X-07464	UNIVERSITY OF ILLINOIS AT CHICAGO (RSPA)	MODEL PUBLIC HEALTH COURSE IN VEHICLE RELATED TRAUMA:PREVENTIVE INTERVENTION	09/13/83	09/30/84	0	0	0	68178
DTN422-83X-07466	UNIVERSITY OF GEORGIA	NEW EDUCATIONAL MEANS FOR TEACHING ADOLESCENTS ABOUT ALCOHOL	02/23/84	09/15/86	0	0	0	43400
DTN422-83X-07467	UNIVERSITY OF TEXAS (RSPA)	SCHOOL BASED PROGRAM TO INCREASE THE USE OF SAFETY BELTS AMONG ADOLESCENTS	08/23/83	08/04/85	0	0	0	67000
PPA-HS-017	TRANSPORTATION SYSTEM CENTER	ENGINEERING SUPPORT/INTEGRATED VEHICLE SYSTEMS	05/07/80	09/30/80	300000	0	0	0
PPA-HS-028	TRANSPORTATION SYSTEMS CENTER	IMPLEMENTATION OF INNOVATION - M/V INDUSTRY	01/31/80	09/30/80	120000	0	0	0
PPA-HS-029	TRANSPORTATION SYSTEMS CENTER	TRUCK AND BUS FUEL ECONOMY	06/18/80	09/30/80	275100	0	0	0
PPA-HS-117	TRANSPORTATION SYSTEMS CENTER	ENGINEERING SUPPORT/INTEGRATED VEHICLE SYSTEMS	03/09/81	09/30/81	0	211500	0	0
PPA-HS-128	TRANSPORTATION SYSTEMS CENTER	IMPLENTATION OF INNOVATION - M/V INDUSTRY	07/29/81	09/30/81	0	1690500	0	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
PPA-HS-134	TRANSPORTATION SYSTEMS CENTER	ALCOHOL COUNTERMEASURES SUPPORT	03/09/81	09/30/81	0	30000	0	0
PPA-HS-135	TRANSPORTATION SYSTEMS CENTER	COMPUTER SUPPORT	03/09/81	09/30/81	0	125000	0	0
PPA-HS-136	TRANSPORTATION SYSTEMS CENTER	U.S. VEHICLE REGISTRATION DATA	03/09/81	09/30/81	0	73000	0	0
PPA-HS-151-157	TRANSPORTATION SYSTEMS CENTER	AUTOMOTIVE FUEL ECONOMY - TECHNOLOGY ASSESSMENT	03/25/81	09/30/81	0	2350000	0	0
PPA-HS-167	TRANSPORTATION SYSTEM CENTER	TECNICAL INFORMATION--NCSA	03/09/81	09/30/81	0	100000	0	0
PPA-HS-168	TRANSPORTATION SYSTEMS CENTER	U.S. MOTOR VEHICLE SAFETY INFORMATION SYSTEM	03/09/81	09/30/81	0	130000	0	0
PPA-HS-169	TRANSPORTATION SYSTEMS CENTER	TRANSPORTATION INFORMATION	03/09/81	09/30/81	0	100000	0	0
PPA-HS-283	TRANSPORTATION SYSTEMS CENTER	FINITE ELEMENT ANALYSIS OF ROLLING TIRES	10/31/83	09/30/82	0	0	100000	0
PPA-HS-292	TRANSPORTATION SYSTEMS CENTER	PEDESTRIAN/BICYCLIST /PUPIL TRANSPORTATION	03/03/82	09/30/84	0	0	211110	0
PPA-HS-301	TRANSPORTATION SYSTEMS CENTER	EVALUATION OF PROPRIETARY DEVICE	06/17/83	09/30/83	0	0	0	294000
PPA-HS-302	TRANSPORTATION SYSTEMS CENTER	MOTOR VEHICLE SAFETY CHARACTERISTICS	07/19/83	09/30/83	0	0	0	150000
PPA-HS-303	TRANSPORTATION SYSTEMS CENTER	MIT AUTO PROJECT	06/17/83	09/30/83	0	0	0	100000
PPA-HS-334	TRANSPORTATION SYSTEMS CENTER	ALCOHOL COUNTERMEASURES SUPPORT--SHARED BY TSP(2339AC)	06/17/83	09/30/83	0	0	0	75000
PPA-HS-336	TRANSPORTATION SYSTEMS CENTER	US VEHICLE REGISTRATION DATA BASE PROJECT	06/17/83	09/30/83	0	0	0	100000

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
PPA-HS-367	TRANSPORTATION SYSTEMS CENTER	SUPPORT TO NATL CTR FOR STAT & ANALYSIS	06/17/83	09/30/83	0	0	0	215000
PPA-HS-368	TRANSPORTATION SYSTEMS CENTER	U.S. MOTOR VEHICLE SAFETY INFORMATION SYSTEM	06/17/83	09/30/83	0	0	0	100000
PPA-HS-370	TRANSPORTATION SYSTEMS CENTER	EXPOSURE ANALYSIS	06/17/83	09/30/83	0	0	0	429000
PPA-HS-371	TRANSPORTATION SYSTEMS CENTER	INFORMATION SYSTEMS EVALUATION	06/17/83	09/30/83	0	0	0	390000
PPA-HS-376	TRANSPORTATION SYSTEMS CENTER	OCCUPANT MODELING	06/17/83	09/30/83	0	0	0	1053000
PPA-HS-385	TRANSPORTATION SYSTEMS CENTER	DWI COUNTERMEASURES	06/17/83	09/30/83	0	0	0	47000
PPA-HS-388	TRANSPORTATION SYSTEMS CENTER	MAN LOOP PERFORMANCE MEASUREMENT REQUIREMENTS	06/17/83	09/30/83	0	0	0	30000
PPA-HS-390	TRANSPORTATION SYSTEMS CENTER	HEAVY DUTY VEHICLE BRAKE SYSTEMS	06/17/83	09/30/83	0	0	0	66000
PPA-HS-394	TRANSPORTATION SYSTEMS CENTER	RAPID ALCOHOL RESEARCH EXPERIMENTS	06/17/83	12/21/82	0	0	0	380000
PPA-HS-397	TRANSPORTATION SYSTEMS CENTER	HEAVY TRUCK SAFETY ANALYSIS	06/17/83	09/30/83	0	0	0	50000
PPA-HS-398	TRANSPORTATION SYSTEMS CENTER	INFORMATION REPORTING AND DISTRIBUTION	06/17/83	09/30/83	0	0	0	150000
PPA-HS-399	TRANSPORTATION SYSTEMS CENTER	SAFETY BELT SUPPORT - INCLUDES FY82 C/O FROM PPA-HS-386, PPA-HS-387	06/17/83	09/30/83	0	0	0	175000
R4842318	U.S. GOV'T PRINTING OFFICE	BILL OF LADING	07/01/80	07/10/80	28700	0	0	0
RD-583-2	VEHICLE RESEARCH AND TEST CENTER	AIRBAG DEMONSTRATION PROGRAM (TESTING)	03/01/80	09/30/84	0	0	0	97013
RD380-1	VEHICLE RESEARCH AND TEST CENTER	HEAVY TRUCK FUEL ECONOMY	05/21/80	09/30/83	60453	0	0	0

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
RD388-2	TRC OF OHIO	TRANSIT BUS FUEL ECONOMY	07/07/80	09/30/82	59959	0	0	0
SRL 05	VEHICLE RESEARCH AND TEST CENTER	AIR BRAKE RESEARCH - SRL-5	03/01/80	09/30/84	147389	0	0	104164
SRL 12	VEHICLE RESEARCH AND TEST CENTER	EVALUATION OF SIDE IMPACT DUMMY	04/21/80	09/30/80	92689	0	0	0
SRL-17	VEHICLE RESEARCH AND TEST CENTER	SIDE IMPACT SLED AND PADDING DEVELOPMENT	01/19/82	09/30/82	31017	0	1400	0
SRL-19	TO TRANS RESEARCH CENTER OF OHIO-SRL-19	TRAJECTORIES OF SMALL UNRESTRAINED CHILDREN	12/26/79	09/30/82	29899	0	0	0
SRL-20	VEHICLE RESEARCH AND TEST CENTER	VEHICLE AGGRESSIVENESS AND COMPACTIBILITY	05/15/80	09/30/81	31574	228709	0	0
SRL-26	VEHICLE RESEARCH AND TEST CENTER -TRC-	LIGHT TRUCK SIDE STRUCTURE EVALUATION	12/29/81	09/30/82	0	444684	0	0
SRL-27	VEHICLE RESEARCH AND TEST CENTER -TRC-	SIDE IMPACT PADDING INTEGRATION	06/04/80	09/30/81	43512	0	0	0
SRL-28	VEHICLE RESEARCH AND TEST CENTER -OSU-	PEDESTRIAN RULEMAKING EXPLORATORY - PEDESTRIAN IMPACT MODEL	12/04/81	09/30/82	0	72772	0	0
SRL-32	VEHICLE RESEARCH AND TEST CENTER	FOUNDATION BRAKE RESEARCH - SRL-32	09/30/81	09/30/84	0	0	25025	89191
SRL-34	VEHICLE RESEARCH AND TEST CENTER	HYDRAULIC BRAKE RESEARCH PROGRAM - HEAVY DUTY VEHICLE - SRL-34	09/30/81	09/30/84	0	0	0	77768
SRL-36	VEHICLE RESEARCH AND TEST CENTER	THORAX IMPACT SIMULATOR - SRL-36	09/30/81	09/30/84	0	37421	0	110887

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
SRL-39	VEHICLE RESEARCH AND TEST CENTER	PEDESTRIAN ACCIDENT RECONSTRUCTION II - SRL-39	09/30/81	09/30/84	0	62984	0	19279
SRL-40	VEHICLE RESEARCH AND TEST CENTER	ANALYSIS AND RECONSTRUCTION OF CADAVER TESTS - SRL-40	09/30/81	09/30/84	0	86153	0	37618
SRL-42	VEHICLE RESEARCH AND TEST CENTER	DUMMY MANAGEMENT PROGRAM - SRL-42	09/30/81	09/30/84	0	0	0	196755
SRL-46	TRC OF OHIO-SRL-46	DYNAMIC TESTING FOR IMPROVEMENT OF COMPUTER SIMULATION MODEL	09/30/81	09/30/84	0	57188	0	0
SRL-49	VEHICLE RESEARCH AND TEST CENTER	TESTS OF GLAZING MATERIALS - SRL-49	09/30/81	09/30/84	0	0	0	36259
SRL-51	VEHICLE RESEARCH AND TEST CENTER	RESTRAINT MODEL VALIDATION TESTS - PHASE I - SRL-51	09/30/81	09/30/84	0	0	0	45646
SRL-54	VEHICLE RESEARCH AND TEST CENTER	HEAVY DUTY VEHICLE HANDLING - SRL-54	09/30/81	09/30/84	0	0	0	64448
SRL-59	VEHICLE RESEARCH AND TEST CENTER	PRELIMINARY DEVELOPMENT - HEAD/NECK SIMULATOR	09/30/81	09/30/84	0	0	0	125154
SRL-66	VEHICLE RESEARCH AND TEST CENTER	SIDE INTERIOR STIFFNESS PROPERTIES	09/30/81	09/30/84	0	0	0	96634
SRL-73	VEHICLE RESEARCH AND TEST CENTER	RECONSTRUCTION AND ANALYSIS OF HEAD/NECK TRAUMA - SRL-73	09/30/81	09/30/84	0	0	0	115240
SRL-76	VEHICLE RESEARCH AND TEST CENTER	PEDESTRIAN MATHEMATICAL MODEL (2D AND 3D) - SRL-76	09/30/81	09/30/84	0	0	0	288374
SRL-77	VEHICLE RESEARCH AND TEST CENTER	DEEP - HYBRID III	09/30/81	09/30/84	0	0	0	98839

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CONTRACT NUMBER	CONTRACTOR	TITLE	START DATE	END DATE	FY80	FY81	FY82	FY83
SRL-78	VEHICLE RESEARCH AND TEST CENTER	SID DESIGN MODIFICATIONS - SRL-78	09/30/81	09/30/84	0	0	0	43332
SRL-81	VEHICLE RESEARCH AND TEST CENTER	HARMONIZATION OF BRAKING STANDARDS - PHASE III - SRL-81	09/30/81	09/30/84	0	0	0	43167
** TOTAL **					24252323	23833989	17943847	27765493

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Table F-2

FHWA HIGHWAY SAFETY RESEARCH STUDIES

FUNDED IN FY 1983

Project	Title
1A	Traffic Engineering Improvements for Safety
1E	Safety of Pedestrians and Abutting Property Occupants
1I	Traffic Lane Delineation Systems for Adequate Visibility and Durability
1K	Accident Research and Countermeasures Effectiveness
1L	Improving Traffic Operations during Adverse Environmental Conditions
1M	Operational Safety Improvements for Two-Lane Rural Highways
1N	Safety of Bicyclists, Moped Operators, and Pedestrians
1O	Railroad-Highway Grade Crossings
1P	Visual Guidance for Night Driving
1Q	Research Fellowships for Highway Safety Engineers
1S	Cost-Effective Geometric Design for Changing Vehicles and Limited Resources
1T	Advance Vehicle Protection Systems
1U	Safety Aspects of Increased Size and Weight of Heavy Vehicles
1V	Roadside Safety Hardware for Nonfreeway Facilities
1W	Measurement and Evaluation of Pavement Surface Characteristics
1X	Highway Safety Program Effectiveness Evaluation
1Y	Traffic Management in Construction and Maintenance Zones
1Z	Implementation of Previously Completed Safety Projects

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Table F-2

CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
PROJECT 1A TRAFFIC ENGINEERING IMPROVEMENTS FOR SAFETY				
80-C-00146 MIDWEST RESEARCH INSTITUTE	GEOMETRIC DESIGN REQUIREMENTS FOR HIGHWAY WORK ZONES	092980 093084	0	48114
81-C-00102 TEXAS TRANSPORTATION INSTITUTE	IMPROVEMENTS AND NEW CONCEPTS FOR TRAFFIC CONTROL IN WORK ZONES	091881 123184	0	46743
82-C-00022 KETRON, INC.	TRAFFIC SIGNAL BRIGHTNESS	062982 101984	130000	43937
82-C-00061 TEXAS A&M RESEARCH FOUNDATION	ENGINEERING FACTORS AFFECTING TRAFFIC SIGNAL YELLOW TIME	092382 082584	91990	2500
82-C-00062 KETRON, INC.	LIMITED SIGHT DISTANCE WARNING FOR VERTICAL CURVES	092182 022984	121958	0
82-C-00064 TRANSPORTATION RESEARCH CORP	IMPROVED TECHNIQUES FOR COLLECTING SPEED DATA	092482 063084	135079	0
82-C-00095 VA. HWY. AND TRANS. COUNCIL	BENEFITS AND SAFETY IMPACT OF NIGHT WORK ZONE ACTIVITIES	093082 073184	92674	0
83-C-00036 CENTER FOR APPLIED RESEARCH	TRAFFIC CONTROL FOR REVERSIBLE FLOW, TWO-WAY LEFT TURN LANES	062283 102284	0	78999
83-C-00052 MARTIN PARKER AND ASSOCIATES.	METHODS FOR REDUCING LARGE SPEED DIFFERENCES IN TRAFFIC STREAMS	072783 102784	0	89657
83-C-00089 AMAF INDUSTRIES, INC.	EFFECTS OF SHOULDER TEXTURE TREATMENTS ON SAFETY	093083 123184	0	157068
83-C-00128 MARTIN R. PARKER & ASSOC., INC	GUIDELINES FOR ESTABLISHING SPEED ZONES	092983 103085	0	41856
FH-11-9648 INSTITUTE FOR RESEARCH	PERFORMANCE STANDARDS FOR DETERMINING LUMINOUS REQUIREMENTS FOR TRAFFIC CONTROL DEVICES	092579 083182	0	3143
FH-11-9688 TEXAS TRANSPORTATION INSTITUTE	USE AND DELINEATION OF TRAFFIC BARRIERS IN WORK ZONES	092879 073084	0	0

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
PROJECT 1C ANALYSIS AND REMEDIES OF FREEWAY TRAFFIC DISTURBANCES				
FH-11-9290 DIAZ, SECKINGER & ASSOCIATES	TRAFFIC SIMULATION HANDBOOK.	092882 042883	2990	0
PROJECT 1E	Safety of Pedestrians and Abutting Property Occupants			
80-C-00060 CITY OF SAN FRANCISCO	SAFE FACILITIES FOR PEDESTRIANS (SAN FRANCISCO)	051380 062884	0	3237
81-C-00073 CITY OF SEATTLE	PRIORITY ACCESSIBLE NETWORK FOR THE ELDERLY AND HANDICAPPED	062681 012084	0	0
81-C-00079 CITY OF BALTIMORE	PRIORITY ACCESSIBLE NETWORKS FOR THE ELDERLY AND HANDICAPPED	070181 113083	6000	1137
81-C-00123 CITY OF NEW ORLEANS	PRIORITY ACCESSIBLE NETWORKS FOR THE ELDERLY AND HANDICAPPED	100181 081283	0	0
PROJECT 1I TRAFFIC LANE DELINEATION SYSTEMS FOR ADEQUATE VISIBILITY AND DURABILITY				
83-P-30766 SOUTHWEST RESEARCH INSTITUTE	TEMPERATURE MEASUREMENT OF EPOXY THERMOPLASTIC APPLIED BY AIRLESS SPRAY SYSTEM	080583 092083	0	18754
FH-11-9647 B. A. BODENHEIMER & CO., INC.	DESIGN, CONSTRUCTION AND EVALUATION OF INSTALLATION EQUIPMENT FOR THE RECESSED REFLECTIVE MARKER	091879 113082	8640	20000
PROJECT 1K ACCIDENT RESEARCH AND COUNTERMEASURE EFFECTIVENESS				
NHTSA	SPECIAL STUDY OF ACCIDENTS INVOLVING LONGITUDINAL BARRIERS AND CRASH CUSHIONS	110681 010187	0	0
NHTSA	SPECIAL STUDY OF ACCIDENTS INVOLVING LUMINAIRES AND SIGN SUPPORTS -- FHWA NASS PROJECT NUMBER 2	111881 070184	0	0
81-Y-30042 DEPARTMENT OF COMMERCE	1983 NATIONWIDE PERSONAL TRANSPORTATION STUDY (NPTS)	093081	0	0
82-C-00045 TEXAS A&M RESEARCH FOUNDATION	SEVERITY INDICES FOR ROADSIDE FEATURES-A PILOT STUDY	092082 091484	171908	0
83-C-00034 THE GRANVILLE CORPORATION	SENSITIVITY OF RESOURCE ALLOCATION MODELS TO DISCOUNT RATE AND UNREPORTED ACCIDENTS	072083 122084	0	46000

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
83-C-00044 ARVIN/CALSPAN	VALIDATION OF NON-ACCIDENT VARIABLES AS SAFETY MEASURES	071883 101485	0	182900
83-C-00058 GOODELL-GRIVAS, INC.	COST-EFFECTIVENESS OF COUNTERMEASURES FOR UTILITY POLE ACCIDENTS USER MANUAL	080883 050984	0	32748
83-C-00148 GOODELL-GRIVAS, INC.	INEXPENSIVE ACCIDENT COUNTERMEASURES AT NARROW BRIDGES	093083 093086	0	100000
83-Y-30040 NHTSA	REIMBURSABLE AGREEMENT WITH NHTSA FOR "SMALL CAR SAFETY STUDY"	092783	0	20000
FH-11-9500 GOODELL-GRIVAS, INC.	ANALYSIS OF URBAN ARTERIAL ACCIDENT EXPERIENCE AND IDENTIFICATION OF POTENTIAL COUNTERMEASURES	032282 011083	45389	0
PROJECT 1L IMPROVING TRAFFIC OPERATIONS DURING ADVERSE ENVIRONMENTAL CONDITIONS				
83-C-00147 UNIV. OF GEORGIA RESEARCH FOUN	CMA MANUFACTURE (II): IMPROVED BACTERIAL STRAIN FOR ACETATE PRODUCTION	093083 033086	0	412841
PROJECT 1M RURAL HIGHWAY OPERATIONAL SAFETY IMPROVEMENTS				
81-C-00096 INSTITUTE FOR RESEARCH	DRIVER NEEDS ON TWO-LANE RURAL HIGHWAYS	091681 063084	0	0
81-P-30120 BROOKHAVEN NATIONAL LABORATORY	CPU TIME WITH BROOKHAVEN NATIONAL LABORATORY	093082 033083	0	6000
82-C-00070 MIDWEST RESEARCH INSTITUTE	ALLEVIATION OF OPERATIONAL PROBLEMS ON TWO-LANE HIGHWAYS	092482 112484	383095	0
82-Y-10211 NATIONAL INSTITUTES OF HEALTH	PURCHASE ORDER WITH THE NATIONAL INSTITUTE OF HEALTH COMPUTER CENTER TO RUN TESTS OF TWO WAY RURAL ROAD SIMULATOR	111681 093082	0	3000
83-C-00117 GOODELL-GRIVAS, INC.	COST-EFFECTIVE CROSS SECTION DESIGN FOR TWO LANE RURAL ROADS	092983 092985	0	203839
FH-11-8595 MIDWEST RESEARCH INSTITUTE	ALLEVIATION OF OPERATIONAL PROBLEMS: STATE PRACTICES AND EXPERIENCE	073182 123184	130812	0
FH-11-9663 SYSTEMS APPLIED SCIENCES CORP	SAFETY AND OPERATIONAL IMPACT OF RESURFACING, RESTORATION, AND REHABILITATION PROJECTS	110179 073183	0	0

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
PROJECT 1N SAFETY OF BICYCLISTS, MOPED OPERATORS, AND PEDESTRIANS				
80-C-00059 CITY OF BOULDER, COLORADO	SAFE PEDESTRIAN FACILITIES (SAN FRANCISCO)	051380 021283	0	2356
80-C-00105 CITY OF BALTIMORE	SAFE FACILITIES FOR PEDESTRIANS (BALTIMORE)	082980 053184	0	0
80-C-00145 GOODELL-GRIVAS, INC.	PEDESTRIAN SIGNALIZATION ALTERNATIVES	092480 113083	0	5029
81-C-00020 BIOTECHNOLOGY, INC.	PEDESTRIAN RISK EXPOSURE MEASURES	122380 100483	0	28378
81-C-00027 NEW YORK DOT	SAFE FACILITIES FOR PEDESTRIANS (NEW YORK)	010581 050584	13752	1131
82-C-00046 GOODELL-GRIVAS, INC.	METHODS OF INCREASING PEDESTRIAN SAFETY AT RIGHT TURN ON RED INTERSECTIONS	090982 120984	161856	12486
83-C-00023 TECHNOLOGY APPLICATIONS, INC.	WARRANTS FOR PEDESTRIAN OVER AND UNDERPASSES	061383 061384	0	72466
83-C-00108 URBITRAN ASSOCIATES, INC.	URBAN PEDESTRIAN SAFETY PROGRAM SYNTHESIS	092683 092684	0	66808
83-Y-30004 OST, FHWA	PEDESTRIAN SAFETY CONFERENCE	022583 090183	0	18500
PROJECT 1O RAILROAD HIGHWAY GRADE CROSSINGS				
	GBL FOR SHIPMENT OF THREE PORTABLE VIDEO RECORDING SYSTEMS	060383	0	210
80-C-00180 UNIVERSITY OF TENNESSEE	INNOVATIVE RAILROAD-HIGHWAY CROSSING ACTIVE WARNING DEVICES	100180 053184	0	17900
81-C-00059 ALLARD, INC.	ALTERNATIVE WAYS TO IMPROVE THE VISIBILITY OF RAILROAD-HIGHWAY CROSSING SIGNALS	060581 080583	0	0
82-C-00048 GOODELL-GRIVAS, INC.	COST EFFECTIVENESS ANALYSIS OF USING RAILROAD-HIGHWAY CROSSING ACTIVE ADVANCE WARNING DEVICES	091382 121384	170900	0

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
83-C-00092 TUSTIN ENTERPRISES	RAILROAD-HIGHWAY GRADE CROSSING HANDBOOK-UPDATE	092183 012185	0	67538
83-C-00130 GOODELL-GRIVAS, INC.	CONSEQUENCES OF MANDATORY STOPS AT RAILROAD-HIGHWAY CROSSINGS	092083 032085	0	90342
83-Y-30012 FEDERAL RAILROAD ADMIN.	REIMBURSABLE AGREEMENT WITH FRA, "RAILROAD-HIGHWAY CROSSING SAFETY PROGRAMS"	092983 092984	0	15000
PPA HW-221 TRANSPORTATION SYSTEMS CENTER	IMPROVING THE USEFULNESS OF RAILROAD-HIGHWAY ACCIDENT PREDICTION AND SAFETY FUNDING ALLOCATION MODELS	100176 093083	20000	0
PROJECT 1P VISUAL GUIDANCE FOR NIGHT DRIVING				
81-C-00058 CONSIS CORPORATION	QUANTIFYING VISUAL COMPLEXITY OF THE NIGHT DRIVING SCENE	060181 113183	11915	23007
82-C-00037 KETRON, INC.	REFLECTIVE CHARACTERISTICS OF ROADWAY PAVEMENTS DURING WET WEATHER	082782 073184	226287	0
82-Y-30007 CALSPAN FIELD SERVICES	IDENTIFICATION AND TESTING OF COUNTERMEASURES FOR SPECIFIC ALCOHOL ACCIDENT TYPES AND PROBLEMS (PHASE III)	011982 090183	75000	18570
83-C-00022 MOBILITY SYSTEMS & EQUIP. CO.	FLEXIBLE DELINEATOR POST DURABILITY STUDY	061683 061684	0	84900
83-C-00051 DESIGN-EYE GROUP	TUNNEL ENTRANCE LIGHTING DESIGN USER GUIDE	072683 072584	0	25603
83-C-00056 KENTRON, INC	REDUCED LIGHTING DURING PERIODS OF LOW TRAFFIC DENSITY	081883 080185	0	155676
83-C-00057 MOBILITY SYSTEMS & EQUIP. CO.	STATE-OF-PRACTICE-RETROFLECTIVE MEASUREMENT DEVICES FOR PAVEMENT MARKINGS	072783 042784	0	40000
83-C-00067 URBITRAN ASSOCIATES, INC.	GUIDELINES FOR THE APPLICATION OF ROADWAY DELINEATION TREATMENTS.	083083 053084	0	35980
83-C-00097 INSTITUTE FOR RESEARCH	SIGN LUMINANCE REQUIREMENT FOR VARIOUS BACKGROUND COMPLEXITIES	092183 092184	0	62180
83-C-00107 IFR APPLICATIONS, INC.	MINIMAL LUMINANCE REQUIREMENTS FOR OFFICIAL HIGHWAY SIGNS	092283 092285	0	195600

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
83-C-00141 SYSTEMS TECHNOLOGY, INC.	OVERHEAD GUIDE SIGN VISIBILITY	092783 092785	0	291000
83-P-10124 VIRGINIA D.O.T.	PAVEMENT MARKING REFLECTIVITY CORRELATION STUDY	031483 032983	0	1300
83-P-30926 PHOTO RESEARCH DIV. OF KOLLMOR	REPAIR AND CALIBRATION OF PRITCHARD PHOTOMETER	092883 101283	0	984
FH-11-9482 UNIVERSITY OF COLORADO	DETERMINING PAVEMENT REFLECTIVITY FOR ROADWAY LIGHTING DESIGN	091578 043083	6089	0
PROJECT 1Q	RESEARCH FELLOWSHIPS FOR HIGHWAY SAFETY ENGINEERS			
81-P-40008 WESTERN MICHIGAN UNIVERSITY	GRANT (PURCHASE ORDER) FOR JAMES P. NEVE	040481	920	0
PROJECT 1S	COMPATIBILITY OF HIGHWAY AND VEHICLE STANDARDS WITH DRIVER CHARACTERISTICS			
81-C-00057 BELLOMO-MCGEE INCORPORATED	DRIVER CHARACTERISTICS IMPACTING ON HIGHWAY DESIGN AND OPERATIONS	062582 063083	30380	7052
82-C-00019 HSRI, UNIVERSITY OF MICHIGAN	SIDE FRICTION FOR SUPERELEVATION ON HORIZONTAL CURVES	061782 061884	212513	0
82-C-00031 BELLOMO-MCGEE INCORPORATED	VEHICLE CHARACTERISTICS AFFECTING HIGHWAY DESIGN	090182 070184	135500	6918
83-C-00065 THE GRANVILLE CORPORATION	DEVELOP OF A VALUE CRITERIA METHODOLOGY FOR ASSESSING HIGHWAY SYSTEM COST-EFFECTIVENESS	082483 112484	0	89473
83-C-00086 MOA RESEARCH CORPORATION	STUDIES OF CURB IMPACTS USING THE HIGHWAY-VEHICLE-OBJECT SIMULATION MODEL (HVOSM)	090883 090884	0	25620
FH-11-9575 JACK E. LEISCH, AND ASSOCIATES	EFFECTIVENESS OF DESIGN CRITERIA FOR GEOMETRIC ELEMENTS	081982 022984	64000	0

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
PROJECT 1T ADVANCED VEHICLE PROTECTION SYSTEMS				
	ISSUE GBL TO MOVE PETERBILT TRACTOR	120782	0	1250
81-C-00028 NATIVE AMERICAN CONSULTANTS	TEST FILM ANALYSIS AND VIDEO TAPE RETRIEVAL SYSTEM	052882 020183	11736	0
81-C-00036 ENSCO, INC.	LAB PROCEDURES TO DETERMINE BREAKAWAY BEHAVIOR OF LUMINAIRE SUPPORTS IN MINI-VEHICLE COLLISIONS	021981 093085	26820	412512
81-C-00103 SOUTHWEST RESEARCH INSTITUTE	SELF-RESTORING MEDIAN BARRIERS AND BRIDGE RAILINGS	091881 111684	0	44298
82-C-00086 SOUTHWEST RESEARCH INSTITUTE	EVAL OF DESIGN ANALYSIS PROC. & ACCEPT. CRITERIA FOR RDSIDE HARDWARE	093082 123185	200000	197629
82-P-30107 CHI ASSOCIATES, INC.	PRESENT PAPER AT TRB CONFERENCE.	060482	1480	0
83-C-00008 CARROLL ASSOCIATES	VALIDATION OF EXISTING ROADSIDE SAFETY HARDWARE COMPUTER PROGRAMS	011183 031185	0	118000
83-C-00062 NATIVE AMERICAN CONSULTANTS, I	COLLECTION AND CRITIQUE OF BARRIER AND VEHICLE SIMULATION PARAMETERS AND MAINTENANCE OF VIDEO TAPE TEST LIBRARY	090283 010284	0	34000
83-C-00081 ENSCO, INC.	DESIGN COMPETITION FOR INNOVATIVE SAFE TERMINALS AT GUARDRAIL ENDS	093183 063184	0	169249
83-C-00087 SOUTHWEST RESEARCH INSTITUTE	DESIGN COMPETITION FOR INNOVATIVE SAFE TERMINALS AT GUARDRAIL ENDS	091283 061284	0	150700
83-P-10084 CARROLL ASSOCIATES	TRB DEMONSTRATION DISPLAY - TEST FILM ANALYSIS AND VIDEO TAPE RETRIEVAL LIBRARY	011783 012183	0	19868
83-P-10128 CARROLL ASSOCIATES	USE OF COMPUTER PROGRAM DATABASE QUERY SYSTEM	050583 080583	0	79190
83-P-10128 CHIAPETTA, WELCH & ASSOC., INC	USE OF COMPUTER PROGRAM DATABASE QUERY SYSTEM	050583 080583	0	9997
83-P-10132	TRANSFER OF UPDATED COMPUTER PROGRAM TO FHWA LIBRARY	062483	0	9999
83-P-30323 MOBIL DIESEL REPAIR	REPAIR PARTS AND SERVICING OF PETERBILT TRACTOR LOCATED AT DYNAMIC SCIENCE, INC., PHOENIX, ARIZONA	022883 040583	0	2574

CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
FH-11-9181 TEXAS TRANSPORTATION INSTITUTE	DEVELOPMENT OF SAFER BRIDGE RAILING DESIGNS	100176 020283	92460	10000
FH-11-9284 CHI ASSOCIATES, INC.	ASSESSMENT OF THE PROBABILITY OF INJURY IN THE ANALYSIS AND TESTING OF BRIDGE RAILS	031483	0	24674
FH-11-9287 DYNAMIC SCIENCE, INC.	AN ASSESSMENT OF PERFORMANCE OF IMPACT ATTENUATORS MOUNTED ON CURBS	062977 070282	13685	0
FH-11-9342 SOUTHWEST RESEARCH INSTITUTE	IMPACT ATTENUATORS FOR HEAVY VEHICLES / HEAVY VEHICLE-ESCAPE RAMPS	092977 113082	0	0
FH-11-9343 TEXAS TRANSPORTATION INSTITUTE	ANALYSIS OF THE PERFORMANCE OF RAILING SYSTEMS ON NONLEVEL TERRAIN	090283	0	0
FH-11-9458 TEXAS A&M RESEARCH FOUNDATION	DEVELOPMENT OF SAFER BARRIERS FOR CONSTRUCTION SITES	062980 041884	83137	82000
FH-11-9460 CHIAPETTA, WELCH & ASSOCIATES,	VALIDATION & APPLICATION OF THE GUARD COMPUTER PROGRAM	063078	0	0
FH-11-9462 SOUTHWEST RESEARCH INSTITUTE	BRIDGE RAIL RETROFIT FOR CURVED STRUCTURES	070282 010185	6456	0
FH-11-9673 CHI ASSOCIATES, INC.	ROADSIDE SAFETY ANALYSIS TECHNIQUES, EVALUATION AND SYNTHESIS	092979 103183	0	25000
PROJECT 1U SAFETY ASPECTS OF INCREASED SIZE AND WEIGHT OF HEAVY VEHICLES				
82-C-00025 AUTOMATED SCIENCES GROUP, INC.	TRUCK STOPPING SIGHT DISTANCE REQUIREMENTS	081682 093083	100000	0
82-C-00054 UNIVERSITY OF MICHIGAN	IMPACT OF SPECIFIC GEOMETRIC FEATURES ON TRUCK OPERATIONS AND SAFETY AT INTERCHANGES	091582 113084	228674	10118
82-C-00093 TRANSPORTATION RESEARCH CORP.	FIELD TEST OF THE GRADE SEVERITY RATING SYSTEM	093082 083085	268553	0
83-1-00046 REGENTS OF THE UNIV. OF MICHIG	TRUCK TRACTIVE POWER CRITERIA	071583 071585	0	236915
83-C-00073 ANALYSIS GROUP, INC.	ANNUAL REVIEW OF THE FEDERALLY COORDINATED PROGRAM (FCP) PROJECT 1U	082583 022584	0	31100

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
FH-11-9577 UNIVERSITY OF MICHIGAN	MEASUREMENT OF PAVEMENT-TRUCK INTERACTION UNDER EXPERIMENTAL CONDITIONS	040579 043083	0	0
PROJECT 1V ROADSIDE SAFETY HARDWARE FOR NON-FREEWAY FACILITIES				
81-C-00039	WEAK POST BARRIER SYSTEM	022781	0	0
TEXAS A&M RESEARCH FOUNDATION		083184		
81-C-00074 MOBILITY SYSTEMS	SAFETY ASSESSMENT OF SEVERAL TRAFFIC CHANNELIZING DEVICES	053081 102683	0	0
81-C-00076 SOUTHWEST RESEARCH INSTITUTE	GUARDRAIL AND MEDIAN BARRIER TERMINALS FOR MINI-SIZED CARS	063081 063084	0	107540
82-C-00051 TEXAS A&M RESEARCH FOUNDATION	EVALUATION OF BARRIER LIMIT CAPACITY FOR DIFFERENT CLASSES OF VEHICLE AND IMPACT CONDITIONS	091482 091484	13537	49339
82-C-00052 TEXAS A&M RESEARCH FOUNDATION	ROADSIDE SAFETY TECHNOLOGY	093082 093085	150000	109384
83-C-00009 TEXAS A&M RESEARCH FOUNDATION	SAFER WOODEN UTILITY POLES	021883 082185	0	303256
83-C-00028 SOUTHWEST RESEARCH INSTITUTE	GUARDRAIL - BRIDGE RAIL TRANSITION DESIGNS	070183 090185	0	297500
83-C-00060 CALSPAN FIELD SERVICES, INC.	ROLLOVER POTENTIAL OF VEHICLES ON EMBANKMENTS, SIDESLOPES AND OTHER ROADSIDE FEATURES	081983 121985	0	358277
83-C-00068 SOUTHWEST RESEARCH INSTITUTE	MEDIAN BARRIER TERMINALS AND MEDIAN TREATMENTS	082483 022486	0	273500
83-C-00100 SOUTHWEST RESEARCH INSTITUTE	EFFECTS OF CHANGES IN EFFECTIVE RAIL HEIGHT ON BARRIER PERFORMANCE	092283 122285	0	320200
83-C-00140 ENSCO, INC.	IMPACT ATTENUATORS - A CURRENT ENGINEERING EVALUATION	092783 082785	0	297664
83-P-10052 SOUTHWEST RESEARCH INSTITUTE	THRIE BEAM GUARDRAIL TEST WITH A PICKUP TRUCK	110982 032583	0	8363
FH-11-9418 SOUTHWEST RESEARCH INSTITUTE	RETROFIT RAILINGS FOR NARROW THROUGH TRUSS AND OTHER OBSOLETE BRIDGES	042478 040483	4942	15096

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
FH-11-9485 TEXAS A&M RESEARCH FOUNDATION	TEST AND EVALUATION OF A HIGH PERFORMANCE MEDIAN BARRIER	060282 041883	6031	0
FH-11-9614 ENSCO, INC.	SAFETY MODIFICATION OF TURNED-DOWN GUARDRAIL TERMINALS	070979 113083	0	48622
FH-11-9647 B. A. BODENHEIMER & CO., INC.	DESIGN, CONSTRUCTION AND EVALUATION OF INSTALLATION EQUIPMENT FOR THE RECESSED REFLECTIVE MARKER	091879 053183	16002	0
PROJECT IN MEASUREMENT AND EVALUATION OF PAVEMENT SURFACE CHARACTERISTICS				
80-C-00049 PENN STATE UNIVERSITY	SURVEY SYSTEM FOR ROAD ROUGHNESS, RUTTING AND TOPOGRAPHY	040180 123184	0	0
81-C-00063 PENNSYLVANIA TRANSPORTATION IN	EVALUATION OF PAVEMENT TEXTURE	060981 031684	0	7756
81-C-00090 PENNSYLVANIA STATE UNIV.	PRE-EVALUATION AND PREDICTION METHODS FOR CHANGES IN PAVEMENT FRICTION	081781 073184	0	0
82-C-00056 TEXAS A&M RESEARCH FOUNDATION	PAVEMENT SURFACE CONDITIONS MEASUREMENT FOR SAFETY IMPROVEMENTS	092482 032483	216782	0
82-Y-10328 NAVAL SEA SYSTEMS COMMAND	SIMULATION OF PAVEMENT VEHICLE INTERACTIONS	122975 123183	75000	75000
83-C-00004 NITTANY ENGINEERS & MANAGEMENT	DATA COLLECTION PROC. FOR USE W/SKID RESISTANCE MEASUREMENT	111682 051684	0	130884
83-C-00109 ARE, INC.	PROCEDURES FOR THE ANALYSIS OF PAVEMENT CONDITION DATA	092983 032986	0	284900
83-C-00114 KLD ASSOCIATES, INC.	INVESTIGATION OF THE FEASIBILITY OF PAVEMENT CRACK MEASUREMENT FROM A SURVEY VEHICLE	092683 122684	0	85400
83-C-00123 UNIVERSITY OF MICHIGAN	METHODOLOGY FOR ROAD ROUGHNESS PROFILING AND RUT DEPTH MEASUREMENT	092683 032686	0	284260
FH-11-9591 PENN STATE UNIVERSITY	PAVEMENT SURFACE TEXTURE - SIGNIFICANCE AND MEASUREMENT	043079 052984	0	43065

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
PROJECT 1X HIGHWAY SAFETY PROGRAM EFFECTIVENESS EVALUATION				
81-C-00101 MIDWEST RESEARCH INSTITUTE	IDENTIFICATION AND QUANTIFICATION OF RELATIONSHIPS BETWEEN TRAFFIC CONFLICTS AND ACCIDENTS	092381 021584	0	17892
82-C-00014 UNIVERSITY OF NORTH CAROLINA	EXPOSURE MEASURES FOR EVALUATING HIGHWAY SAFETY	051082 091583	100000	132550
82-C-00042 THE GRANVILLE CORPORATION	ALTERNATIVE APPROACHES TO ACCIDENT COSTS CONCEPTS	092082 102083	0	3000
82-C-00089 JHK & ASSOCIATES	THE EFFECT OF A TEN PERCENT DISCOUNT RATE ON SAFETY ALLOCATION	092882 042883	45000	0
83-C-00043 GOODELL-GRIVAS, INC.	COST-EFFECTIVE INVENTORY PROCEDURES FOR HIGHWAY DATA	071483 071484	0	57600
83-C-00072 SOUTHWEST RESEARCH INSTITUTE	RELATIONSHIP BETWEEN HIGHWAY ACCIDENT SEVERITY AND FULL-SCALE CRASH TEST RESULTS	082483 052484	0	45148
FH-11-8558 UTAH D.O.T.	STATE HIGHWAY SAFETY INFORMATION SYSTEMS - STATE OF UTAH	110882 110884	70460	40000
FH-11-9424 UNIVERSITY OF NORTH CAROLINA	ACCIDENT RESEARCH MANUAL AND WORKSHOP	090178 103182	9525	0
FH-11-9523 SOUTHWEST RESEARCH INSTITUTE	DETERMINATION OF THE OPERATIONAL REQUIREMENTS FOR A ROADSIDE ACCIDENT COUNTERMEASURE WARRANT SYSTEM	093078 043084	97283	0
PROJECT 1Y TRAFFIC MANAGEMENT IN CONSTRUCTION AND MAINTENANCE ZONES				
82-C-00036 RUSSEL M. LEWIS	DEVELOPMENT OF A LOW-COST, LOW-MAINTENANCE CHANNELIZING DEVICE	090182 090183	53640	8000
PROJECT 1Z	IMPLEMENTATION OF PREVIOUSLY COMPLETED SAFETY PROJECTS			
	ROADSIDE SAFETY TECHNOLOGY - TECHNICAL REVIEW GROUP	021083 103085	0	15950
80-C-00053 WY HIGHWAY DEPT.	EVALUATION OF AN EARTH HEATED BRIDGE DECK	042880 013084	7845	0
80-C-00080 TEXAS A&M RESEARCH FOUNDATION	TESTING OF IMPROVED EVALUATION TECHNIQUES USING A REPRESENTATIVE SET OF ACCIDENT COUNTERMEASURES	062780 122783	0	16921

CONTRACTS ACTIVE IN FY 1983

CONTRACT NO ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
81-C-00071 JHK INTERNATIONAL, INC.	HIGHWAY SAFETY HARDWARE MAINTENANCE	092881 022883	4622	0
81-P-30111 DYNATHERM CORPORATION	CLOSED LOOP EARTH HEAT PIPE	062681 062683	0	0
82-C-00048 GOODELL-GRIVAS, INC.	RAIL-HIGHWAY CROSSING ACTIVE ADVANCE WARNING DEVICES	091382 121384	0	0
82-C-00098 MERLE E. KECK	ROADWAY LIGHTING HANDBOOK - CHAPTER 6 REVISION	093082 071583	11442	0
82-F-30121 OHIO DOT	PAVEMENT MARKING REFLECTIVITY CORRELATION STUDY	040183 051583	1093	0
82-P-30118 NEW YORK DOT	PAVEMENT MARKING REFLECTIVITY CORRELATION STUDY	090982 032983	1050	75
83-C-00040 COMSIS CORPORATION	COLLECTION OF WORK ZONE ACCIDENT DATA TRAINING COURSE	072783 042784	0	42516
83-C-00096 JHK AND ASSOCIATES	TRAFFIC SIGNAL DESIGN-COURSE	092983 122984	0	136635
83-P-30613 CARSONITE INTERNATIONAL CORP.	PURCHASE ORDER FOR MODULAR GLARE SCREEN	060783 062083	0	4320
FH-11-8212 MARYLAND D.O.T.	IDENTIFICATION AND QUANTIFICATION OF THE EXTENT OF ASPHALT STRIPPING IN FLEXIBLE PAVEMENTS	072783 072784	0	28592
FH-11-8595 MISSISSIPPI DOT	FIELD EVALUATION OF RAPID SET EPOXY ADHESIVE	071879 033183	2760	0
FH-11-9211 MICHIGAN DOT	RETRO-REFLECTOMETER CORRELATION	050482 050183	9960	0
FH-11-9279 KENTUCKY DOT	FIELD EVALUATION OF SNOWPLOWABLE MARKERS	051082 062382	0	264

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CONTRACTS ACTIVE IN FY 1983

CONTRACT NU ORGANIZATION	TITLE	START/ FINISH	FUNDING 1982	FUNDING 1983
PROJECT 1ZA				
83-C-00103 JHK AND ASSOCIATES, INC.	TRAFFIC GAP DETECTOR	092183 032186	0	173443
83-C-00116 RCA SERVICE COMPANY	INVESTIGATION OF PERFORMANCE AND OPERATING CHARACTERISTICS OF TIME BASED COORDINATION UNITS -- TECHNICAL SUPPORT SERVICES	092983 032984	0	25810
83-P-30556 TECHNOLOGY APPLICATIONS, INC.	SIGOP-III TESTING - TECHNICAL SUPPORT SERVICE	031183 041183	0	3248
HW-332 TRANSPORTATON SYSTEMS CENTER	MICROCOMPUTER SOFTWARE MAINTENANCE AND SUPPORT	042683 093084	0	135000
83-P-30814 WEST VIRGINIA D.O.T.	PURCHASE ORDER W/WEST VA. DOT - "FIELD TESTING OF RECESSED REFLECTIVE PAVEMENT MARKER EQUIPMENT	081583 081485	0	5000
FH-11-8591 FLORIDA D.O.T.	WATER BORNE TRAFFIC PAINT (W/FLORIDA D.O.T.)	082483 083184	0	33568
83-A-30062 MISSOURI DOT	IDENTIFICATION AND QUANTIFICATION OF THE EXTENT OF ASPHALT STRIPPING IN FLEXIBLE PAVEMENTS (W/MISSOURI DOT)	092383 092384	0	25000

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Appendix G
Highway Safety
Innovative Project Grants

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Highway Safety Innovative Project Grants

The Highway Safety Innovative Project Grant Program was authorized by the addition of Section 407 to Chapter 4, Title 23, United States Code (U.S.C.). Section 407 was enacted in the Surface Transportation Assistance Act of 1978 (P.L. 95-599). This new section responded to a recommendation from the Secretary of Transportation for an alternative to the Incentive Grant Program, which rewarded states for the passage of a safety belt use law, the reduction in the number of traffic fatalities, or the reduction of the state's traffic fatality rate. The Secretary and representatives of the states were seeking a new program which would encourage innovation, reflect new thinking, and bring fresh talent into the highway safety effort. The initial appropriation for Section 407 was included in the Department of Transportation and Related Agencies Appropriation Act for 1981 (P.L 96-400) at a one time level of $1,000,000.

NHTSA was assigned the responsibility for implementing the Innovative Project Grant Program, in consultation with the Federal Highway Administration, as part of its broader responsibilities for the administration of Chapter 4, Title 23, U.S.C., the Highway Safety Act of 1966. Rulemaking was completed and the final rule was published in the Federal Register on December 22, 1980.

Preapplications for Innovative Project Grants were solicited in a Federal Register Notice that was also published December 22, 1980. More than 5,000 solicitations were also distributed to state, local, and volunteer organizations by a network of public, technical, and governmental media. Responses were received from 384 applicants. These were analyzed according to the criteria established in the final rule, and 25 applicants were invited to submit fully developed proposals to compete for the funds. Grants were awarded to 19 applicants and the list was published in the Federal Register on November 30, 1981.

In June 1983, the initial progress report on the Innovative Project Grant Program was published (DOT HS 806 422).

Innovative Project Goals and Current Status[1]

Project No. 1-A06 --- Vermont SEAT

Project Goal:

1. To evaluate the ability of a hospital-based car seat rental program to provide infant safety seats throughout an entire state.

2. To evaluate the effect of the program on safety seat use by the parents of infants and children up to three years old.

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1 Updated through early 1984 because they are tracked on a fiscal year basis.

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This project will complete its formal operation, data collection, evaluation analysis, and report preparation in 1984. The project was a positive influence in passage of a mandatory safety seat use law in Vermont. This influence was built on the success and experience gained for the loaner/rental program for child safety seats and hospital-based infant safety carriers.

When the project was started, approximately eight percent of the infants and young children rode in protective seats. Data from the project indicates 70 to 90 percent safety carrier usage for infants at hospital discharge and 70 percent use by toddlers.

Project No. 2-A09 --- National Remove Intoxicated Drivers (RID)

Project Goal:

1. Form 10 new chapters in New York and 5 in other states.
2. Develop, validate, and distribute chapter assistance material.
3. Evaluate the impact of citizen action groups.

The organization increased from 15 chapters in New York and 4 in other states, to 70 chapters in 27 states.

The chapter assistance material was developed and organized in a manual, "How Can I Help?," and three bulletins, "RID Organization Guide," "Guide for Organizing RID Chapters," and "Performance Standards and Goals --- RID USA."

RID reports that organizations of concerned citizens contribute to more effective drunk driving programs in the following ways:

- Observers at DWI trials.
- Collecting data on court-related dispositions of DWI cases.
- Reporting summaries of DWI dispositions at court officials.
- Participating as members of local Task Forces on DWI issues.
- Presenting testimony on personal and/or community related DWI incidents.
- Providing support/encouragement to victims of DWI crashes.
- Increasing public awareness of DWI issues by presenting factual experience and summaries to the news media.

This project was completed and the final report was submitted in December 1982.

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Project No. 2-A29 --- Mid-Hudson RID

Project Goal: To evaluate the impact of a "Court Watch" program on alcohol-related law enforcement, prosecution and judicial practices, and DWI conviction rates.

Data collection in the courts of Duchess, Orange, Putnam, and Ulster Counties, New York has been completed. Project completion is scheduled for late 1984.

Project No. 3-A13 --- Central Virginia Educational Television

Project Goal: To develop five 30-minute TV-Education programs on safety belt use, alcohol abuse, and driver performance records for classroom presentation to potential drivers.

This project was completed and the final report was submitted to NHTSA in January 1984.

Two of the five films were evaluated by sample student audiences and driver education teachers. The scores achieved by the students who viewed the films indicated a higher level of subject knowledge retention than that of a control group who did not see the film. Teacher reaction to both films was "extremely favorable" according to the evaluators. The Southern Education Communication Association is reported to have proposed national distribution of the series through its Education Program Service.

Project No. 3-A16 --- National Public Service Research Institute

Project Goal: To evaluate the effect of early, short duration driver license suspension on traffic violation and accident recidivism in relation to administrative cost.

The cooperating state driver licensing agency (Michigan) generated the necessary computer programs in 1982 for the random assignment process and the acquisition of evaluation data. The operational phase, offender assignment, started in early 1983 and was completed in December 1983. The offenders' driving records will be monitored until December 1984; data analysis and final report preparation are scheduled to be completed in 1985.

Project No. 3-A28 --- School of Hygiene and Public Health, Johns Hopkins University

Project Goal: To produce a monograph that will encourage greater cooperative effort between health agencies and highway safety agencies.

This project documents the manner and degree of health agency involvement in motor vehicle injury prevention activities. It describes not only the existing cooperative activities between state highway safety

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and health agencies, but also the perceived barriers that must be overcome to provide increased interagency cooperation.

The project was completed and the final report was submitted to NHTSA in February 1983. NHTSA published the report (DOT HS 806 531) and distributed it widely.

Project No. 4-A22 --- Highway Safety Research Center, University of North Carolina

Project Goal: To evaluate the effectiveness of using material incentives to increase safety belt use.

This project was completed in October 1982. The final report was published (DOT HS 034 894) and distributed widely.

Project No. 5-A05 --- Rehabilitation Institute of Chicago

Project Goal: To plan, organize, and train a medical network of safety belt and child safety seat proponents.

The grantee organized and trained a network of 25 medical professionals from 14 of the 17 spinal cord injury care centers in the United States to advocate and promote the use of safety belts and child safety seats. The network attracted the participation of patients in spinal cord rehabilitation as knowledgeable speakers and advocates of safety belts and other injury prevention devices.

The project was completed and the final report was transmitted to NHTSA in July 1984.

Project No. 5-A19 --- Highway Safety Research Institute, University of Michigan

Project Goal: To develop a computer program that will permit highway safety analysts to permit sophisticated analysis on a small computer.

This project was completed in January 1983. The grantee converted the documentation of sophisticated statistical analysis routing to a version suitable for use on a microcomputer. The conversion permits analysts at "a lower level of sophistication" to apply "multi-dimensional contingency table analysis" to traffic safety problems without comprising the integrity of the procedure or its use. Upon confirming the validity of the conversion, the grantee trained personnel from the Michigan Office of Highway Safety Planning.

Project No. 5-A43 --- National Safety Council

Project Goal: (Amended - May 1984)
To document existing workplace occupant protection programs so that they can serve as models and contacts for others.

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This project is scheduled for completion in 1984.

The grantee will assemble, publish, and distribute a national directory of workplace occupant protection programs. Each participating employer that provides information will receive a copy of the directory. The National Safety Council will also prepare an article on the availability of the directory and include it in its publications directed at Council members who are also employers.

Project No. 5-A46 --- Traffic Safety Association of Michigan

Project Goal: To actively promote safety belt use in private sector industries and businesses in Michigan.

A promotional brochure and an implementation manual were prepared to motivate employers to include safety belt use as part of their corporate health and safety program.

The final report of the project will be available in 1984.

Project No. 5-A70 --- Indiana University Foundation

Project Goal: To analyze and estimate the biases inherent in the "case control" method for collecting data on driver and vehicle exposure to accident risk.

The project was completed and the final report was submitted in August 1983. The report concluded that "in general there is no simple way of estimating the bias of population estimates derived from case control data collection efforts."

Project No. 7-A02 --- University of Kansas Hospital

Project Goal: To validate a method for motivating parents to use protective infant seats.

Data collected in the summer of 1983 indicated that parents in both the experimental and control groups were using safety seats in more than 80 percent of the observed trips. This level and the consistency of use is greater than experience at a nearby medical facility.

The State of Kansas has provided Highway Safety Grant (Section 402) funding to extend the project into 1984.

Project No. 9-A12 --- California League for Alternative Services Program

Project Goal: To develop a resource center, including written standards and procedures, for the alternative community-service sentencing of traffic violators.

This project was completed in December 1983. The final reports present a summary of the current practice of 37 city/county alternative sentencing programs, and recommended standards and guidelines for alternative sentencing. The League will use the standards and guidelines to

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obtain greater consistency in community-service sentencing throughout California.

Project No. 9-A15 --- American Trauma Society

Project Goal: To compare the effectiveness of providing child passenger protection information as part of pre-natal care, as part of the post-delivery information provided in the hospital, or by the pediatrician at the six-week follow-up visit.

The grantee shows that pre-natal instruction on the use of proper infant carriers, and on the potential consequences of not using them, motivated parents positively. Four to six months after their child's birth, 96 percent of the parents who received the instruction said they used a crash-tested safety seat, compared to 78 percent use by parents who did not receive the instruction. One group of parents who reported demographic factors often associated with low usage rates, indicated 94 percent use after instruction compared with 60 percent use by parents who did not receive the instruction.

This project was completed in June 1984.

Project No. 9-A32 --- Public Policy Research Organization, University of California (Irvine)

Project Goal: To investigate the epidemiology of motor vehicle-related, non-crash injuries to children, and develop a model to produce data to be integrated into existing crash data bases.

Typical injuries covered by this project resulted from: (1) child falling from the cargo area of a truck or pickup, (2) child falling from a vehicle after opening the door while the vehicle was in motion, and (3) child dislodged from a normal passenger riding position as the result of a sudden vehicle maneuver.

The major findings from the data analysis:

- About half of the injuries resulted from the child being ejected from the vehicle. There were more ejections from "non-crash" accidents (77) than from crashes (42).
- The very young passenger (under age 5) is particularly vulnerable to injury from either ejection or interior impact. The consequences of not using appropriate protective devices are confirmed by the non-crash accident data as well as the crash experience.
- The importance of the child passenger's riding location was also confirmed. "A disproportionate number --- were injured in areas of small trucks, vans, and hatchbacks that lacked adequate protective padding."

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The project was completed in December 1983. It concluded that the "non-crash accident" must be viewed as an event with a high probability of child ejection and resulting serious injuries.

Project No. 9-A36 --- School of Public Health, University of California (Los Angeles)

Project Goal: To assess the effectiveness of an education program for preschool children to develop the habit of using car safety seats.

This project developed attention getting devices and motivational messages appropriate to pre-school children to encourage their voluntary and continuing use of child safety seats. The use of safety seats increased from 20 percent in the children observed to 40 percent after exposure to the project materials and instruction.

This project was completed in early 1984.

Project No. 9-A38 --- Mothers Against Drunk Drivers (MADD)

Project Goal: To publish a "Survivors Rights" manual and to establish 17 new chapters of MADD.

The Survivors Rights manual was produced in March 1983 and distributed to each of MADD's chapters for local dissemination.

At the close of the grant period, October 1982, MADD consisted of 91 chapters in 31 states. During the grant period, the organization established 74 new chapters, far exceeding the original goal. A chapter census reported by MADD in January 1984, showed the organization had grown to 261 chapters in 44 states and one in Toronto, Ontario, Canada.

Project No. 11-A02 --- Public Technology, Inc.

Project Goal: To prepare an Alcohol Safety Action Guide that will assist the executives of local governments manage and finance alcohol safety programs; to promote the adoption of effective low-cost solutions to drunk driving through the auspices of the National League of Cities.

This project was completed and the Guide was published (DOT HS 806 385) in March 1983. NHTSA distributed 7,000 copies to local government officials, state alcohol program coordinators, and a variety of private and corporate organizations. Several corporations endorsed the Guide and assisted in expanding its distribution.

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Appendix H

Highway Safety Research
Summary of Activities in Progress for FY 1983

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FCP Code	Title	Performing Organization	Status
31A1-944	Removal of Multiway Stop Signs Without Hazard (FHWA Contract DTFH61-82-00029)	AMAF, Ind., Inc.	Stop sign removal practices were reviewed for 31 political entities. Candidate signs warning of stop sign removal were laboratory tested. Field tests of selected signs are planned.
31A1-954	Limited Sight Distance Warning for Vertical Curves (FHWA Contract DTFH61-82-C-00062)	Ketron, Inc.	Laboratory tests were conducted on a variety of word and symbol signs. The best signs were field tested using test subjects and uncontrolled observations. The data from the field studies are being analyzed.
31A1-984	Traffic Control for Reversible Flow/ Two-Way Left Turn Lanes (FHWA Contract DTFH61-83-C-00036)	Center for Applied Research	Visits were made to eight cities with Reversible Flow/Two-Way Left Turn Lanes to observe their operations. Driver requirements are being determined and laboratory tests for candidate control devices are being planned.
31A2-064	Engineering Factors Affecting Traffic Signal Yellow Time (FHWA Contract DTFH61-82-C-00049)	Texas Transportation Institute	Time-lapse film data has been collected at seven intersections in Texas and Virginia. Data is being reduced to determine decelerations, reaction times, start-up times, violations, etc., related to grades, approach speed, signal times, etc. A study manual to collect and analyze the data has been drafted. A nationwide study is proposed for FY 85.

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FCP Code	Title	Performing Organization	Status
41A2-114	Yellow-Red Overhead Flashing Beacons (CA-HPR-F81TE15)	Caltrans	Accidents for the five most recent years at sites controlled by beacons are being compared to similar stop sign-controlled intersections to determine the long-term accident benefits to beacons.
41A2-114	Accident Countermeasures at High Speed Signalized Intersections (WVA-HPR-71)	West Virginia University	A literature review and a mail survey are being conducted to obtain current practices. A synthesis report on accident countermeasures will identify intersection characteristics that cause problems and likely solutions.
41A2-123	Left-Turn Signal Warrants for Arizona (AZ-HPR-192)	Arizona State University	Other states' left-turn signal warrants have been reviewed. Exclusive and permissive left-turn operations are being studied in the field at 6 to 9 intersections. Methods to select the optimum left-turn control will be developed.
41A1-994	Evaluation of Curve Delineation Signs (VA-HPR-56)	Virginia Research Council	Field tests were completed to determine the effects of post-mounted delineations, stripped vertical panels and chevron alignment signs on curves negotiated by drivers in the normal traffic stream.
41A1-034	Guidelines for the Use of Two-Way Left-Turn Lanes (NE-HPR-82-3)	University of Nebraska	Four four-lane roadway sections are being studied using time-lapse photography to collect volumes, left-turns, speeds, stops and delays. The results will be used to calibrate simulation models before developing guidelines.

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FCP Code	Title	Performing Organization	Status
41A2-024	Operational Effects of RTOR (NJ-HPR-7762)	NJ-DOT	Accident data were collected on a statewide sample of intersections. Delay studies completed at 5 intersections.
31A2-074	Traffic Signal Brightness (FHWA Contract DTFH61-82-C-00022)	Ketron, Inc.	Laboratory tests show no safety effects from dimming traffic signals to 30% of the ITE standard. Controlled field tests show a slight increase in reaction times for dimmed signals. Additional field tests are planned.
41A1-094	Guidelines for Permissive Left-Turn Signal Phasing (VA-HPR-83-WPS)	Virginia Research Council	A literature search was conducted. Forty-five sites have been selected for study including 20 exclusive/permissive, 15 exclusive and 10 permissive left-turn phasing. Data has been collected and is being analyzed.
31A3-084	Effects of Shoulder Textured Treatments on Safety (FHWA Contract 83-C-00089)	AMAF, Ind. Inc.	The contract has just been signed and information is being collected from states on locations where textured shoulders have been installed.
A3-054	Development of Individual Self-Paced Instruction for Traffic Engineers	FHWA Staff	Equipment has been reviewed, ordered, and delivered. A pilot study program is being developed.
41A2-134	Optimization of Traffic Signal Change Interval (AZ-HPR-191)	University of Arizona	Time-lapse data is being collected at intersections in Tuscon and Pima County and data reduction has been started.
41A3-073	Evaluation of Experimental Rumble Strips (LA-HPR-81-255)	LA-DOT	New experimental rumble strips have been installed to reinforce standard traffic control devices. Accident data is being collected for a five-year period.

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FCP Code	Title	Performing Organization	Status
31K3-048	Validation of Non-Accident Measures for Rural Highways	Calspan Field Services, Inc.	Study is examining non-accident measures for unsignalized rural intersections. Site selection is underway.
31K4-052	Sensitivity of Resource Allocation to Discount Rate and Unreported Accidents	Granville Corporation	Contract signed in August.
31K3-058	Conflicts on Accident Surrogates	Midwest Research Institute	Study examined medium volume intersections. Data collection has been completed; analysis of data is underway.
31K4-022	Cost-Effectiveness Techniques for Highway Safety	Texas Transportation Institute	Computer programs for optimal safety project selection along with supporting data have been developed. Final report is being prepared.
31K6-022	Development of a Warrant System for the Selection of Roadside Accident Countermeasures	Southwest Research Institute	Collection of roadside/vehicle encroachment data continues.
31K5-046	Inexpensive Accident Countermeasures at Narrow Bridges	Goodell-Grivas, Inc.	Solicitation for appropriate sites is underway. Emphasis is on inexpensive countermeasures such as delineation and signing.
31K3-122	Analytical Alternatives to Safety Data Collection	Univ. of Toronto	Data analysis is being performed. Funding has also been contributed to Transport Canada and NHTSA.
31K5-018	Evaluation of the Effectiveness of Breakaway Sign and Luminaire Supports	Southwest Research Institute	Data collection for small car/pole accidents is continuing under a special NASS study.
41M2-152	Warning Signs and Advisory Speed Signs -Reevaluation of Practice (Ohio HPR 14327)	Ohio University	Submitted final report to State and FHWA for review.

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FCP Code	Title	Performing Organization	Status
41M2-542	Development of Warrants for Special Turning Lanes at Rural Non-Signalized Intersections (Nebraska HPR 79-3)	University of Nebraska	Preparing final report.
31M2-062	Driver Needs on Two-Lane Rural Highways (Contract DTFH61-81-C-00096)	Institute for Research	Obtained driver expectancies, identified and analyzed problem sites, determined information deficiencies, and identified required driver decisions based on a sample of over 5000 miles of two-lane rural roads.
31M2-723	Development of Optimum Edgeline Widths for Two-Lane Rural Roads (Contract DTFH61-82-C-00063)	Bellomo-McGee, Inc.	Completed the sensitivity analysis of potential benefits and costs of 2-, 6-, and 8-inch edgelines. Developing the experimental plan for a potential field evaluation of edgeline widths.
31M2-693	Cost-Effective Cross-Section Design for Two-Lane Rural Roads (Contract DTFH61-82-C-00117)	Goodell-Grivas, Inc.	Evaluating potential information sources.
31M2-682	Alleviation of Operational Problems on Two-Lane Highways (Contract DTFH61-82-C-00070)	Midwest Research Institute	Obtained design practices from 12 states, accident data from 80 sites and traffic operational data from 30 sites. This completes the data collection.
31M2-686	Alleviation of Operational Problems: State Practices and Experience	Task Orders with 12 states	Furnished research contractor (Midwest Research Institute) with state design practices, accident data, and site descriptions.
51M2-562	Multilane Design Alternatives for Improving Suburban Highways (NCHRP, 2-13)	Midwest Research Institute	Submitted detailed work plan.

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FCP Code	Title	Performing Organization	Status
21M2-784	ROADSIM Testing and Demonstration	FHWA Staff	Reviewing ROADSIM and TWOWAF models.
31N1-032	Warrants for Pedestrian Over and Underpasses (Contract DTFH61-84-R-00020)	Technology Applications, Inc.	Contract initiated in June 83. State-of-the-art reviews of existing warranting procedures for crossing structures is underway.
31N1-052	Methods of Increasing Pedestrians Safety at Intersections (Contract DTFH61-82-4-00046)	Goodell-Grivas, Inc.	Review of compliance with RTOR is underway. Development of engineering countermeasures for RTOR intersections is proceeding.
41N1-122	Maryland Pedestrian Study (MD HPR AW083-283-046)	State of Maryland	Highway sections with large numbers of pedestrian accidents have been identified. After classifying these sections into similar situations, accident countermeasures will be developed.
3101-144	Innovative Railroad Highway Crossing Active Warning Devices	Transp. Center, Univ. of Tennessee	Controlled testing is over and data has been evaluated. Experimental plan for field testing has been prepared. The contractor has identified three crossings for field testing and is working with the railroad in developing a test agreement. The active devices to be field tested are being fabricated. The devices to be field tested include four-quadrant gates with skirts, four-quadrant flashing lights with cantilevered strobes, and standard highway traffic signals (mast and cantilevered) with bar strobes in the red signal heads.

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FCP Code	Title	Performing Organization	Status
3101-194	Cost-Effectiveness Analysis of Using Railroad-Highway Crossing Active Advance Warning Signals	Goodell-Grivas, Inc.	The contractor has identified six crossings for use in the field testing and is now working with the railroads to obtain permission to tie into the track circuitry. The experimental plan for field testing has been approved and the devices have been fabricated. The three versions of the active advance warning devices include three versions of the design portion of the signal, a supplemental message plate and two-8 inch flashing yellow lights.
3101-254	Consequences of Mandatory Stops at Crossings for Certain Classes of Vehicles	Goodell-Grivas, Inc.	Contract was signed in late FY 1983. Contractor is now preparing the detailed work plan.
3101-274	Rail-Highway Safety	Tustin Enterprises	This effort is jointly funded by FRA and FHWA and began in late FY 1983. The contractor is now preparing a detailed work plan. The objectives of this study are to evaluate revisions to the grade crossing inventory, evaluate the effectiveness of state and railroad safety programs, and evaluate the FRA state participation programs.
31P3033	Sign Luminance Requirement for Various Background Complexities (Contract DTFH61-83-C-00097)	Institute for Research	Factor analysis being run on data obtained from prior research effort.

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FCP Code	Title	Performing Organization	Status
31P3042	Reduced Lighting During Periods of Low Traffic Density (Contract DTFH61-83-C-00056)	Ketron, Inc.	Literature review and model development effort underway.
41P3102	Cost Effectiveness of Rural At-Grade Intersection Lighting (Nebraska HPR)	University of Nebraska-Lincoln	Data analysis and report preparation underway.
41P3112	Efficiency of Raised Reflective Pavement Marker Systems (Texas HPR)	Texas Transp. Institute	Outdoor laboratory reflectivity and core studies underway.
41P3122	Recommended Delineation Treatments of Selected Situations on Rural Highways (Ohio HPR)	Ohio State University	Accident analysis near completion, laboratory study underway.
21P3132	Night Visibility of Overhead Guide Signs (Staff)	FHWA	State-of-the-art report being drafted.
31P3142	Overhead Guide Sign Visibility Factors (Contract DTFH61-83-C-00141)	Systems Technology, Inc.	Developing estimates of sign detection and reading times.
41P3164	Legibility of Sign Letters and Backgrounds Under Various Conditions of Weather and Viewing, and Durability of Reflective Sheeting (Florida HPR)	Florida DOT	Field data collection underway.
31P1012	Quantifying Visual Complexity of the Night Driving Scene (Contract DTFH61-81-C-00058)	Comsis Corp.	Preparing final report and developing field measurement technique for implementing model.

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FCP Code	Title	Performing Organization	Status
31P1062	Minimal Luminance for Official Highway Signs (Contract DTFH61-83-C-00107)	IFR Applications, Inc.	Literature review underway, obtaining information on current maintenance procedures.
31P2012	Reflective Characteristics of Roadway Pavements During Wet Weather (Contract DTFH61-83-C-00037)	Ketron, Inc.	Initiating field data collection at test sites.
31P2072	Motorist Comprehension of Regulatory, Warning and Symbol Signs (Contract DTFH61-83-C-00136)	BioTechnology, Inc.	Literature review underway.
41P2081	Visual Processing and Driving Safety (Arizona HPR)	Arizona State University	Pilot laboratory testing underway.
31P3012	Identification and Testing of Countermeasures for Specific Alcohol Accident Types and Problems (Contract DTFH61-82-Y-30007)	Calspan Field Services, Inc.	Final report being prepared.
41P3172	Optimal Placement of Reflective Pavement Markers (Ohio HPR)	Ohio Univ.	Analysis of driver performance at field site underway.
41P3184	Delineation of Interchanges Without Lighting (New Jersey HPR)	New Jersey DOT	Pilot studies are underway.
31R1-014	Improved Techniques for Collecting Speed Data (Contract 82-C-064)	Transportation Research Corporation	Field experiments completed; data analysis continuing.

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FCP Code	Title	Performing Organization	Status
3141-012	Methods for Reducing Large Speed Differences (Contract 83-C-052)	Martin Parker & Assoc.	Searching out techniques and technology in USA and abroad.
31R1-024	Guidelines for Establishing Speed Zones (Contract 83-C-128)	Martin Parker & Assoc.	Surveyed current practice underway.
51S2-022	Parameters Affecting Design Sight Distance and Vehicle Acceleration and Deceleration Characteristics of Trucks (NCHRP 15-8)	Univ. of Michigan Transportation Research Institute	The acceleration and deceleration characteristics of trucks have been identified.
31S2-042	Side Friction for Superelevation (Contract DTFH61-82-C-00019)	Univ. of Michigan Transportation Research Institute	Completed the analytical model necessary to evaluate full-scale test data to determine the build-up of side friction at the tire-pavement interface under various speeds and superelevation rates.
31S3-012	Development of a Value Criteria Methodology for Assessing the Highway Cost Effectiveness (Contract DTFH61-83-C-00065)	The Granville Corporation	Just started.
31S1-062	Vehicle Characteristics Impacting Highway Design (Contract DTFH61-82-C-00031)	Bellomo-McGee, Inc.	Submitted interim report, which identifies those geometric design and operational criteria affected by vehicle characteristics.
31S1-072	Studies of Curb Impacts Using the Highway-Vehicle Object Simulation Model (HVOSM) (Contract DTFH61-83-C-00086)	MGA Research Corporation	Just started.

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FCP Code	Title	Performing Organization	Status
31T1-192	Assessment of the Probability of Injury in the Analysis and Testing of Bridge Rails	Chi Associates, Inc.	Dummy test data from study 31T2-202 was compared with occupant simulation model results and improvements were made in the UCIN model. Contract completed.
31T2-232	Analysis of the Performance of the Railing Systems on Nonlevel Terrain (DOT-FH-11-9343)	Texas Transportation Institute	W-beam, thrie beam and cable guardrails were tested with cars on slopes to provide data for accompanying analytical study. Final report has been received.
31T2-242	Development of Safer Barriers for Construction Sites (DOT-FH-11-9458)	Texas Transportation Institute	Phase I report is being prepared. A simple analytical method was developed to predict the dynamic deflection of portable CMB's. Phase II tests of permanently installed CMB's will begin soon.
31T2-322	Guardrail-Bridge Rail Transition Designs (DTFH61-83-00028)	Southwest Research Institute	The transition designs currently used by the states have been reviewed and several have been selected for full-scale testing.
31T1-434	Transfer of Updated CRUNCH Computer Program to FHWA Library (DTFH61-83-P-10132)	Chiapetta, Welch and Associates	An improved version of CRUNCH that man model 90 degree car impacts with curbs and wheel snagging on posts is being added to the library.
31T2-212	Self-Restoring Median Barriers and Bridge Railings (DTFH61-81-C-00103)	Southwest Research Institute	A self-restoring median barrier and a retrofit bridge rail have been tested and developed.
31T2-372	Effects of Changes in Effective Rail Height on Guardrail Performance (DTFH61-83-C-00100)	Southwest Research Institute	New start. A literature search is being conducted.

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FCP Code	Title	Performing Organization	Status
31T3-202	Improved Performance of Small Sign Supports (DTFH61-80-C-00170)	Mobility Systems and Equipment Co.	Conducting small sign support tests and measuring the frontal crush and inertial properties of minicompact cars.
41T2-782	Energy Absorbing Traffic Rail (Texas HPR 2-18-84-417)	Texas Transportation Institute	New start. A self-restoring bridge rail will be designed using crushable rubber, spring blockouts behind the rails.
51T2-962	Performance of Longitudinal Traffic Barriers (NCHRP Project 22-4)	Southwest Research Institute	New start. A working plan has been prepared.
31T1-332	Evaluation of Design Procedures and Acceptance Criteria (DTFH61-82-C-00086)	Southwest Research Institute	Research gaps and appurtenance evaluation procedures not adequately covered by NCHRP 230 have been identified. The occupant flail space model is being verified and improved.
31T2-202	Development of Safer Bridge Railing Designs (DOT-FH-11-9181)	Texas Transportation Institute	Five bridge railings have been tested with cars and buses. Contract completed.
31T3-212	Safer Wooden Utility Poles (DTFH61-83-C-00009)	Texas Transportation Institute	Static tests are being conducted on an upper pole breakaway joint. Lighter weight slipbase hardware has been developed.
31T1-256	Test Film Analysis and Video Tape Retrieval Library (DTFH61-81-C-00028)	Native American Consultants	The available crash test films and records have been cataloged. About 77 films have been converted to video tape and the test data has been incorporated into the retrieval system data base. Contract completed.

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FCP Code	Title	Performing Organization	Status
41T2-732	Vehicular Impact Tests of a Contemporary See-Through, Structural, Steel Bridge Barrier Railing (California HPR F83TL07)	California DOT	A new bridge railing has been tested with 1,800-lb. and 4,500-lb. cars.
41T2-762	Modified Type T5 Bridge Rail to Redirect Trucks and Buses (Texas HPR 2-18-83-416)	Texas Transportation Institute	New start. Analysis completed. A 54-inch-high combination metal rail and concrete safety shape barrier will be built and tested with an 80,000-lb. tractor-trailer.
41T2-732	High Performance Railing for Curved Ramp (Texas IPE study)	Texas Transportation Institute	A 90-inch-high concrete bridge railing with windows and a 48 in safety shape lower face was constructed on a ramp with 14 degree curvature and 0.05 superelevation. It sustained minimal damage when it redirected an 80,000-lb. gasoline tanker at 51.4 mph and 15 degrees.
41T2-772	Resistance of Anchor Bolts to Fatigue and Impact Loading (Texas HPR 3-5-84-382)	University of Texas at Austin	New start. Particular emphasis will be placed on the Texas T101 bridge rail anchor bolts.
31T1-224	Validation of Existing Roadside Safety Hardware Computer Programs (DTFH61-83-C-00008)	Carroll Associates	New start. A general procedure for validating simulation computer programs will be developed and used to validate the CRUNCH program.
31T5-202	Rollover Potential of Vehicles on Embankments, Sideslopes and Other Roadside Features (DTFH61-83-C-00060)	Calspan Field Services, Inc.	New start. While emphasis will be placed on small cars and utility vehicles, larger vehicles will also be considered.

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FCP Code	Title	Performing Organization	Status
31T2-182	Retrofit Railings for Narrow Through Truss and Other Functionally Obsolete Bridges (DOT-FH-11-9418)	Southwest Research Institute	A lower cost retrofit bridge rail was tested and developed. Contract completed.
31T2-262	Safety Modification of Turned-Down Guardrail Terminals (DOT-FH-11-9614)	Ensco, Inc.	A "Collapsing, Releasing Terminal" (CRT) has been developed that is significantly safer for minicompact cars. The final report and a videotape presentation are being prepared.
31T1-203	Roadside Safety Analysis Techniques, Evaluation and Synthesis (DOT-FH-11-9673)	Chi Associates, Inc.	Current simulation computer programs were collected, reviewed and installed in FHWA's computer. A graphics output package was installed in the GUARD program.
31T1-342	Laboratory Procedures to Determine Breakaway Behavior of Luminaire Supports in Mini-Vehicle Collisions (DTFH61-81-C-00036)	Ensco, Inc.	The FOIL impact test facility is being constructed at TFHRC. An adjustable bogie test vehicle is being designed.
31T2-152	Test and Evaluation of a High-Performance Median Barrier (DOT-FH-11-9485-2)	Texas Transportation Institute	Tests completed. Final report is being reviewed.
41T4-723	Evaluation of Impact Attenuators (Maryland HPR 7-83)	Maryland DOT	New start. Ways of reducing maintenance costs will be investigated.
41T2-742	Investigation of the Suitability of Lake States Timber Species for Guardrail Posts (Michigan HPR 97239)	Institute of Wood Research, Michigan Technological University	Phase I report is being reviewed.

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FCP Code	Title	Performing Organization	Status
31T2-252	Weak Post Barrier System (DTFH61-81-C-00039)	Texas Transportation Institute	A new light post thrie beam guardrail is being redesigned to improve its performance.
31T2-222	Evaluation of Barrier Limit Capacity for Different Classes of Vehicles and Impact Conditions (DTFH61-82-C-00051)	Texas Transportation Institute	The "Tall Wall", a new 42-inch-high, concrete safety shape barrier has been developed. A series of baseline crash tests have been completed on the G4 (1s) W-beam guardrail. The Minnesota 3-cable guardrail has successfully redirected a 4,500-lb. car at 60 mph and 25 degrees.
31T4-202	Impact Attenuators-A Current Engineering Evaluation (DTFH61-83-C-00140)	Ensco, Inc.	New start. Tests are being conducted to study the rate at which water drains from the sand in inertial barrels.
31T2-282	Median Barrier Terminals and Median Treatments (DTFH61-83-C-00068)	Southwest Research Institute	New start. Problems peculiar to medium and wide medians, and bridge piers will be addressed.
31T2-272	Guardrail and Median Barrier Terminals for Minicompact Cars (DTFH61-81-C-00076)	Southwest Research Institute	Work is continuing on a retrofit design that will make the BCT terminal safer for minicompact cars. A promising "shredder" impact attenuating terminal is also being tested.
31T2-293	Design Competition for Innovative Safe Terminals at Guardrail Ends (DTFH61-83-C-00081)	Ensco, Inc.	New start.
31T2-302	Design Competition for Innovative Safe Terminals at Guardrail Ends (DTFH61-83-C-00087)	Southwest Research Institute	New start.

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FCP Code	Title	Performing Organization	Status
31T1-266	Collection and Critique of Barrier and Vehicle Simulation Parameters and Maintenance of Video Tape Library (DTFH61-83-C-00062)	Native American Consultants	New start. The existing data base of full-scale test data will be expanded.
41T4-712	Connecticut Impact Attenuation System (Connecticut HPR 876)	Connecticut DOT and Texas Transportation Institute	A steel pipe attenuator, which safely entraps vehicles in side hits and redirects them in "coffin corner" impacts, has passed an extensive series of tests with 1,800-lb. and 4,500-lb. cars. Final report is being written.
41T2-712	Post Spacing for Thrie Beam Bridge Rail (New York HPR 102-7)	New York DOT	A bridge rail made of a 10 ga thrie beam on strong posts 8'-4" apart can be mounted either on a 6-inch curb or directly on the deck. A transition from the rail to a weak post guiderail has also been successfully tested with standard and minicompact cars. Final report is being written.
41T2-702	Roadside Barriers for Bridge Pier Protection (New York HPR 102-6)	New York DOT	A 4,500-lb. car impacted a concrete median barrier at 25 degrees and rode up on it, hitting the bridge pier. This problem was solved by extending a box beam guiderail along the CMB. Tests with 1,800-lb. and 4,500-lb. cars were successful.
41T3-723	Guiderail Delineation (New Jersey HPR 7751)	New Jersey DOT	New start. Initial work will be to determine under what conditions guardrails need to be marked or delineated.

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FCP Code	Title	Performing Organization	Status
41T2-182	End Treatment for Heavy Post Median Barrier (New York HPR 102-3)	New York DOT	A turned-down end treatment has been developed for W-beam median barriers. Final report has been published.
41T2-662	Bridge Deck Design for Railing Impacts (Texas HPR 295)	Texas Transportation Institute	It has been found that the AASHTO formula for load distribution from the post to the slab is not sufficient to prevent deck failure. Recommendations on reinforcing and increased deck edge thickness have been developed. Final report is being written.
41T2-683	Evaluation of Highway Safety Barriers (Kentucky HPR 82-90)	Kentucky DOT	Field studies of impact attenuators, BCT's and escape ramps are continuing.
41T3-712	Improved Design of Lightpoles, Guardrail and Other Appurtenances (Texas HPR 343)	Texas Transportation Institute	A draft report has been prepared on the soil/structure interaction behavior of guardrail posts.
41T2-752	Traffic Barrier Performance Related to Vehicle Size (New York HPR 180-1)	New York DOT	An accident data base containing about 4,700 guiderail and median barrier accidents is being analyzed in detail. Preliminary results indicate that New York's standard rail heights can be lowered by about three inches.
41T3-702	Vehicle Impact Testing of Lightweight Lighting Standards (California HPR F82TL17)	Caltrans	Breakaway support couplings for luminaire supports have been successfully tested with 1,800-lb. cars.

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FCP Code	Title	Performing Organization	Status
41T4-742	Investigation of Cone Setting Trucks for Operator's Safety (California HPR F82EQ07)	Caltrans	Two full-scale crash tests will be conducted to evaluate the structural integrity of the cone truck operator's position.
31U2-082	Impact of Specific Geometric Features on Truck Operations and Safety at Interchanges	University of Michigan Transportation Research Institute	Accident data has been solicited from a number of states and candidate ramps were identified. Descriptive data for the candidate is now being obtained. A user friendly offtracking model has been developed. It is now being refined to produce offtracking plots on an x-y plotter.
31U2-092	Truck Tractive Power Requirements	University of Michigan Transportation Research Institute	A preliminary truck gradeability model has been put on line in order to allow the contractor to conduct sensitivity analysis of truck hill climbing.
31ZW018	Fricton Test and Evaluation Center (DTFH61-80-C-00040)	Texas Transportation Institute	Operations for calibrating skid testers continuing.
31ZW108 31ZW118	Pavement Friction Measurements on Curves (DOT-FH-11-9212), TO 7 (DOT-FH-11-8865), TO 12)	Maine DOT Penn DOT	Work just beginning using modified skid tester for measuring lateral friction on curves.
31ZT018	Roadside Safety Technology (DTFH61-82-C-0052)	Texas Transportation Institute	Literature search and identification of gaps in data completed. Currently "closing gaps" and preparing text outline.
31ZT038	Guardrail on Non-Level Terrain - Movie (DOT-FH-9343)	Texas Transportation Institute	Review of Interlock Version of film completed. Contractor working up final answer print.

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FCP Code	Title	Performing Organization	Status
31Y1-102	Use and Delineation of Traffic Barriers in Work Zones (Contract FH-11-9688)	Texas Transportation Institute	Prepared draft report on results of the barrier delineation part of the study. Preparing draft report on guidelines for the use of temporary traffic barriers.
31Y1-142	Geometric Design Requirements for Highway Work Zones (Contract DTFH61-80-C-00146)	Midwest Research Institute	Completed data collection. Completed majority of data analysis. Preparing draft report for two tasks of study.
31Y1-154	Benefits and Safety Impact of Night Work Zone Activities (Contract DTFH61-82-C-00095)	Virginia Highway and Transportation Research Council	Obtaining data on current practices and experience.
41Y1-722	Handling Traffic in Work Zones (Texas HPR 292)	Texas Transportation Institute	Submitted a draft report documenting a model for calculating the user costs resulting from lane closures through a work zone. Continuing field data collection on other parts of the study.
41Y1-734	Evaluation of Traffic Control Plans at Reconstruction Sites (Texas HPR 321)	Texas Transportation Institute	Reviewing information on current practices and problems associated with the development of work zone traffic control plans.
51Y1-034	Service Vehicle Lighting and Traffic Control Systems for Short-Term and Moving Work Zones (NCHRP Project 17-6)	BioTechnology, Inc.	Received information from 34 warning light system manufacturers. Completed extensive survey of state practices.
31Y1-064	Improvements and New Concepts for Traffic Control in Work Zones (Contract DTFH61-81-C-00102)	Texas Transportation Institute	Preparing draft reports for three of four tasks. Collecting and analyzing data for one task.

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FCP Code	Title	Performing Organization	Status
31ZK328	Collection of Work Zone Accident Data - Training (DTFH61-83-C-00040)	Comsis Corp.	Training course written, submitted, and approved. Course material under development.
31ZA118	Traffic Gap Detector (DTFH61-83-C-00013)	JHK & Assoc.	Contractor modifying R&D report candidate warrants into field applicable warrants. Available gap detector equipment being discussed.
31ZA208	Sign Vandalism Countermeasures (DTFH61-82-C-00087)	Goodell-Grivas, Inc.	Draft manual being reviewed.
31ZK128	State Highway Safety Information Systems (DOT-FH-11-8858, TO 18) (DOT-FH-11-8596, TO 8) (DOT-FH-11-8575, TO 12)	Utah DOT Idaho DOT Kansas DOT	Idaho and Kansas developing work plans. Utah has completed data base, program specs. and testing plan.
31ZK138	Testing Improved Evaluation Techniques (DTFH61-80-C-00080)	Texas Transportation Institute	Presentations completed by contractor in Montana and North Dakota. User's Guide undergoing final revisions.
31ZK018	Cost-Effective Inventory Procedures for Highway Data (DTFH61-83-C-00043)	Goodell-Grivas, Inc.	Agencies selected for collection of state-of-practice data. Source list for inventory equipment prepared.
31ZK028	Cost Effectiveness of Countermeasures for Utility Pole Accidents (DTFH61-83-C-00058)	Goodell-Grivas, Inc.	Agreement reached on appropriate microcomputer hardware, operating systems and software for converting main frame computer program to one suitable for use on a variety of microcomputers.

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FCP Code	Title	Performing Organization	Status
31ZN028	Accessibility of Over and Under Crossings (DTFH61-80-C-00131)	Georgia Inst. of Technology	Contract terminated. User's guide to be available early in 1984.
31ZN128	Urban Pedestrian Safety Program Synthesis (DTFH61-83-C-00108)	Uribtran, Inc.	Model Pedestrian Safety Program manual being updated.
31ZN118	Pedestrian Accident Countermeasures in Puerto Rico (DOT-FH-11-9570)	Puerto Rico Traffic Safety Commission	Safety improvements for pedestrians installed. Collecting "after" data for accident analysis.
31ZN018	Safe Pedestrian Facilities (DTFH61-80-C-00059) (DTFH61-80-C-00060) (DTFH61-80-C-00105) (DTFH61-80-C-00027)	 Boulder, CO San Francisco Baltimore, MD New York, NY	Pedestrian Facility problems have been analyzed, countermeasures developed and implemented. Final reports are being prepared.
31ZN018	Priority Accessible Networks for Elderly and Handicapped Pedestrians (DTFH61-81-C-00123) (DTFH61-81-C-00079) (DTFH61-81-C-00073)	 New Orleans Baltimore, MD Seattle, WA	The procedure described in the "Priority Accessible Networks" manual has been implemented. Final reports have been prepared and are being given a final review.
31Z0018	Railroad-Highway Grade Crossing Manual - Update (DTFH61-83-C-00092)	Tustin Enterprises	Work underway on manual outline. Getting started on literature search.
31Z0068	Standardization of Criteria for Rail-Highway Grade Crossing Construction	Flordia DOT	Contract just starting to develop users manual to apply standard grade crossing features.
31ZP218	Tunnel Entrance Lighting Design — User Guide (DTFH61-83-C-00051)	Design Eye Group	Conducting a review of a previous R&D contract.
31ZP018	Flexible Delineator Post Durability Study (DTFH61-83-L-00022)	Mobility Systems and Equipment Co.	Literature search underway.

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FCP Code	Title	Performing Organization	Status
31ZP028	Guidelines for the Application of Roadway Delineation Treatments (DTFH61-83-C-00067)	Urbitran Assoc., Inc.	Work just beginning on Task A - literature search.
31ZP108	Water-Borne Traffic Paints (FH-11-8591) (DTFH-61-82-A-30003)	Florida DOT D.C. DOT	Field installation to be made in October 1983.
31ZP118	State-of-the-Practice Retro-Reflective Measurement Devices for Pavement Markings (DTFH61-83-C-00057)	Mobility Systems and Equipment Co.	Work just beginning on Task A - literature search.
31ZP128	Recessed Reflective Marker Equipment Evaluation (DTFH61-83-P-30814)	West Virginia Dept. of Highways	Field installations scheduled for Oct.-Nov., 1983.
31ZP138	Field Evaluation of Thermoplastic Systems (FH-11-9472, TO 1)	Alaska DOT	Field installation completed - evaluation period underway.
31ZP148	Retro-Reflective Correlation (FH-11-9211, TO 10)	Michigan DOT	Field measurement completed - data analysis underway.

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